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METHODOLOGICAL ISSUES

LAND-USE, LAND-USE CHANGE AND FORESTRY

Consolidated synthesis of proposals made by Parties

Note by the Chairman

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I. INTRODUCTION

A. Mandate

1. The Conference of the Parties (COP), by its decision 9/CP.4, decided to recommend, at its first session following the completion of the Intergovernmental Panel on Climate Change (IPCC) special report on land-use, land-use change and forestry and its consideration by the Subsidiary Body for Scientific and Technological Advice (SBSTA), draft decisions, for adoption by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its first session, on definitions related to activities under Article 3.3 of the Kyoto Protocol, and on modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas (GHG) emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories might be included under Article 3.4 of the Kyoto Protocol (FCCC/CP/1998/16/Add.1, decision 9/CP.4, paras. 3 and 4).

2. By its decision 16/CP.5, the COP decided to endorse a work programme and elements of a decision-making framework to address the conclusions on land-use, land-use change and forestry (LULUCF) adopted by the SBSTA at its eleventh session, with a view to the COP, at its sixth session, recommending draft decisions relating to decision 9/CP.4, paragraphs 3 and 4, for adoption by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol (COP/MOP) at its first session (FCCC/CP/1999/6/Add.1, decision 16/CP.5).

3. The SBSTA, at its eleventh session, requested Parties to provide submissions by 1 August 2000 with views on, or proposals for definitions on activities under Article 3.3 of the Kyoto Protocol (KP). In addition, Parties were requested to indicate how and which human-induced activities will be included under Article 3.4 of the KP, on modalities, rules, and guidelines related to these activities, which may include any linkages to other relevant paragraphs of Article 3 of the KP, and any relevant information on these activities. Submissions from Parties included in Annex I to the Convention (Annex I Parties) should further include, *inter alia*, a list of additional activities that each individual Party is proposing for inclusion under Article 3.4 of the KP, as well as information on methodologies for measuring and reporting on net changes in greenhouse gas emissions by sources and removals by sources and/or changes in carbon stocks resulting from each activity. Annex I Parties were further requested to provide an assessment of net changes in carbon stocks, and changes in emissions by sources and removals by sinks, associated with the activities under Article 3.3 and 3.4 (FCCC/SBSTA/1999/14, para. 46 (g), (h), and (i)).

4. At the same session, the SBSTA requested the Chairman to prepare, with the assistance of the secretariat, a consolidated synthesis of proposals identified by Parties in their submissions, for consideration by the SBSTA at its thirteenth session (FCCC/SBSTA/1999/14, para. 46 (k)).

5. At its twelfth session, the SBSTA agreed to a format for the submission of the country-specific data and information by Annex I Parties called for by the SBSTA at its eleventh session (FCCC/SBSTA/1999/14, para. 46 (g), (h), (i), and (j)). It concluded that these formats, and the data and information by no means prejudge decisions or conclusions that may be made by either the COP or the SBSTA at future sessions (FCCC/SBSTA/2000/5, para. 32 (d)).

6. At the same session, the SBSTA requested Parties, in preparing their submissions, to provide textual proposals on Article 3.3, 3.4 and 3.7, and explanatory material to provide the context and rationale of the textual proposals (FCCC/SBSTA/2000/5, para. 32 (e)).

7. The SBSTA at its twelfth session also provided the Chairman with a structure for the consolidated synthesis of proposals mentioned in paragraph 4 above. The structure was as follows:

(a) Proposed definitions and accounting approaches related to afforestation, reforestation and deforestation (ARD) under Article 3.3;

(b) How and which additional human-induced activities might be included under Article 3.4, including modalities, rules and guidelines related to these activities and their accounting;

(c) Methodologies for measuring and reporting in relation to Article 3.3 and 3.4 activities;

(d) Overall accounting approaches in relation to requirements of Article 3.3, 3.4 and 3.7 and regarding, *inter alia*, reversibility, natural effects, and accounting interlinkages;

(e) Other.

B. Scope of the note

8. This note by the Chairman, and its addendum, respond to the above requests. The consolidated synthesis of proposals is contained in document FCCC/SBSTA/2000/9, whilst the country-specific data and information and explanatory text is presented in document FCCC/SBSTA/2000/9/Add.1. Submissions from Parties received until 15 August 2000 are contained in document FCCC/SBSTA/2000/MISC.6 and Add.1. All submissions in these documents are reflected in this consolidated synthesis of proposals. Submissions that were received after 15 August are included in document FCCC/SBSTA/2000/MISC.6/Add.2 and proposals contained in these submissions have not be incorporated into this document.

9. This document has six chapters and two annexes. Chapters II to VI correspond to the outline in paragraph 7 above, in accordance with the mandate given in document FCCC/SBSTA/2000/5, paragraph 32 (f). Annex I contains the list of Parties and their corresponding superscript number that are used throughout this document to identify the Party that submitted a proposal (see also paragraph 13 below). Annex II is a document submitted by Costa Rica on behalf of a group of countries. It is presented in its entirety because the submitting Parties decided that it should remain as an integral proposal.

10. A summary of data and information submitted by 21 Parties is contained in document FCCC/SBSTA/2000/9/Add.1. Most information is presented in tabular format and no attempt has been made to analyse the information. Furthermore, references are made to the relevant sections in the two miscellaneous documents containing submissions made by Parties. Every effort was made to include the most relevant information in this document. However, decisions had to be made regarding the inclusion or omission of some explanatory text submitted by Parties in order to achieve a concise and clear document structure. For further detail on this approach, see the introduction to document FCCC/SBSTA/2000/9/Add.1. Parties are urged to

review the complete text contained in the miscellaneous documents should they have questions concerning the information submitted by other Parties.

C. Approach

11. Some Parties have proposed draft decision text related to Article 3.3, 3.4, and other relevant articles of the Kyoto Protocol. Other Parties have made proposals but not in a draft decision format. No attempt has been made to integrate similar proposals by several Parties. The textual proposals submitted by Parties are contained in their entirety in this document in italics. The other proposals are included in the document in "normal" typeface. The Chairman and the secretariat have had to use some judgement as to where and how to place these latter proposals in the text. While every effort was made to reflect the substance of Parties' proposals, minor editorial changes were made where they appeared warranted.

12. Each chapter in this document is divided into sections containing proposals made by Parties in their submissions on particular subjects. Each section starts with the textual proposals made by Parties on that subject in numerical order, followed by *similar* proposals made by other Parties but that have not submitted draft decision text. In each section there may be proposals a, b, and c under number 1 where there is similarity between proposals, or proposal 1, 2, 3, etc. where proposals are divergent. For example:

Chapter III: Additional activities under Article 3.4
Section A: Additional activities
1. Proposals for the first commitment period
Proposal 1a:
Proposal 1b: (similar to 1a)
Proposal 2a: (distinct from 1a and b)
Proposal 2b: (similar to 2a)
Proposal 3: (distinct from previous proposals)
Proposal 4: (distinct from previous proposals)
2. Proposals for activities in the first, second and/or subsequent commitment periods
Proposal 1a:
Proposal 1b:
etc....

13. Superscript country codes throughout the text indicate the Party that submitted a proposal (see annex I for the list of Parties and allocated country codes).

14. When proposals were expressed in the submission in the context of an entire paragraph, the *relevant* text has generally been incorporated into the consolidated synthesis of proposals striving to maintain the essence of the proposal.

15. Proposals related to accounting issues that are applicable to both Article 3.3 and Article 3.4 of the Kyoto Protocol are included in chapter V: Overall accounting approaches. Only where proposals apply uniquely to Article 3.3 or Article 3.4, have they been placed in those respective chapters.

D. Possible action by the SBSTA

16. The SBSTA may wish to take note of this document and the views expressed by Parties at the pre-sessional week of the thirteenth session and request the Chairman to prepare a draft negotiating text for consideration.

17. In addition, the SBSTA may wish to provide guidance to the Chairman, the co-chairmen of the contact group on LULUCF, and the secretariat, related to any preparations for the sixth session of the Conference of the Parties.

II. PROPOSED DEFINITIONS AND ACCOUNTING APPROACHES RELATED TO AFFORESTATION, REFORESTATION AND DEFORESTATION UNDER ARTICLE 3.3

A. Definition of a forest

Proposal 1: No definition of a forest

18. *There is no requirement for a definition of a forest for the purpose of implementing Article 3.3.*[AUS]

Proposal 2a: Country determines definition

19. *Parties may define forest in accordance with their own circumstances and must take into account published definitions. Parties may choose to use different definitions of forest to account for different forest types in their country. The definition or definitions must be used consistently in the accounting in the first and subsequent commitment period. Parties shall provide information on the source and suitability of their definitions under Article 7. Their definitions shall be reviewed in accordance with Article 8 of the Protocol.*[CAN]

Proposal 2b: Country determines definition

20. Countries should be allowed to use their national definitions, provided such definitions are well documented and accepted by the Parties. The definition must enable the Parties to detect carbon stock changes due to land-use change. The definition of a forest should take into account the differences between countries and regions, and between different forest management practices. Amendments might be required to ensure this, following any methods included in the Revised IPCC Guidelines, as elaborated through good practice guidance approved by the Parties.[NOR]

Proposal 2c: Country determines definition

21. *For the purpose of increases to the assigned amount of Annex B Parties for verifiable increases in carbon stock over 2008-2012 from afforestation or reforestation since 1990, each Annex B Party may take national circumstances into account when defining a "forest". Methods for verifying changes in carbon stocks on any such forested land shall be those included in the 1996 Revised IPCC Guidelines, as elaborated through good practice guidance approved by the [COP] [COP/MOP].*[NZL]

22. *For the purpose of decreases to the assigned amount of Annex B Parties resulting from decreases in carbon stock over 2008-2012 from deforestation since 1990, the definition of a "forest" shall be based on land cover and carbon density characteristics detectable at the spatial resolution by which the conversion from forest to some other land-use is able to be ascertained for each Annex B Party. Methods for verifying changes in carbon stocks on any such land shall be those included in the 1996 Revised IPCC Guidelines, as elaborated through good practice guidance approved by the [COP] [COP/MOP].* (NZL)

23. A common definition of "forest" across all Parties is not required to satisfactorily maintain environmental integrity in the implementation of Article 3.3. A practical and flexible approach for the purposes of Article 3.3 is to allow Parties to take into account their national circumstances in defining "forest" while maintaining consistency with their current practice in international sustainable forest management (SFM) reporting. Parties practice in respect of reporting Article 3.3 activities should not be inconsistent with their practice in reporting under existing commitments and obligations. (NZL)

Proposal 2d: Definition determined by country and based on biomass densities

24. There are two levels of definition of a forest. One general level is useful for the purpose of determining that the activities reported are implemented on a forest, which type of forest and which ancillary benefits (sustainable development benefits) can be attained by implementing sequestration or protection activities, and which type of hidden costs (socio-economic and environmental) will have to be reported in case of deforestation. The second level is an accounting definition, in terms of average biomass density and carbon contents per area unit of the different types of forests, and it is useful for the purposes of reporting and monitoring GHG fluxes. (BOL)

25. Definition for the 1st level: A forest is a dynamic complex of plant and animal communities, composed of trees and their associated vegetation and biophysical fluxes, interacting as a functional unit, with highly diverse characteristics depending on the biophysical attributes or features of every ecosystem and biome. Forests ecosystems and their soils provide fundamental ecological services such as watershed protection, the regulation of water regimes, the maintenance of regional climates and habitats for wildlife and genetic resources, as well as a wide range of social and cultural benefits.[1] (BOL)

26. Definition for the 2nd level: A forest is composed of a mix of species of trees and other above-ground vegetation, as well as wildlife and genetic resources. It has specific carbon contents of above-ground biomass (dead and alive), below-ground biomass and soil carbon per area unit, as well as other non-carbon GHG fluxes, specified in every ecosystem. For accounting approaches, the average carbon contents in above-ground and below-ground biomass and soil carbon per area unit, in every major biome type, are the following. (BOL)

[Here, Parties will have to agree on a list of average C carbon per area unit, based on the work of SBSTA, IPCC and other bodies]. (BOL)

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[1] Adapted from IUCN.

Proposal 2e: A single canopy cover threshold for each relevant biome

27. It is suggested that a single threshold of canopy cover be adopted for each relevant biome, such as tropical moist forest, tropical dry forest, boreal forest, temperate forest, planted forest and agroforestry, among others, in order to reduce bias in defining lands under Article 3.3.(CHL)

Proposal 3a: FAO definition with country-specific values for tree height and minimum area

28. *Forest is land with tree crown cover (or equivalent stocking level) of more than 10% and area of more than 0.5 ha. The trees should be able to reach a minimum height of 5m at maturity in situ. Forest may consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground; or of open forest formations with a continuous vegetation cover in which tree crown cover exceeds 10 percent. Young natural stands and all plantations established for forestry purposes which have yet to reach a crown density of 10 percent or tree height of 5m are included under forest, as are areas which are temporarily unstocked as a result of human intervention or natural causes, but which are expected to revert to forest.*[2](FRA)

29. *A Party may use other numerical values for the minimum height and minimum area provisions in the definition of forest traditionally used by that Party, to reflect national circumstances relevant to specified biomes.*(FRA)

30. *The Conference of the Parties, decides to review the definition of forest for the second and subsequent commitment periods in order to reflect better biome-specific circumstances.*(FRA)

Proposal 3b: FAO definition

31. It is proposed that Parties adopt an FAO definition and an activity-based accounting framework for ARD activities.(JPN)

Proposal 3c: A forest definition consistent with the FAO, allowing for country specificity

32. *Decides that for the purposes of implementation of Article 3.3 and Article 3.4, the following definitions shall apply:*

(a) *"Forest" means land:*

(i) *With tree crowns (or equivalent stocking) of a percentage determined in accordance with paragraph 33 below, and*

(ii) *With a minimum area determined in accordance with paragraph 33 below, and*

(iii) *On which the trees have a potential to reach a minimum height of 5 metres at maturity in situ, and*

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[2] The definition of *forest* is taken from the UN-ECE/FAO *Temperate and Boreal Forest Resources Assessment 2000*. (FRA) The original reads 'May consist...' in the third sentence this has been replaced by 'Forest may consist...'

(iv) *On which trees are found in either a closed formation where trees of one or more storeys and undergrowth cover a high proportion of the ground, or an open formation with a continuous vegetation cover in which tree crown cover exceeds the percentage determined in accordance with paragraph 33 below; and*

(v) *Where use is not predominantly for agricultural purposes and the land has not been developed for a non-forest use.*

(b) *"Forest" also includes [young natural stands and plantations established for forestry purposes which have yet to reach a crown density or area as specified in accordance with paragraph 33 below; areas normally forming part of the forest which are temporarily non-stocked as a result of human intervention or natural causes but which are expected to revert to forest; and forest nurseries and seed orchards that constitute an integral part thereof; forest roads and trails; cleared tracts; firebreaks, reserves and other protected areas such as those of special environmental, scientific, historical, cultural or spiritual interest; windbreak and shelterbelt trees with an area of more than 0.3 hectares; rubber plantations and cork oak stands.]*[3,(USA)]

33. *Further decides that each Party in Annex I shall, for purposes of applying the definition of "forest" in paragraph 32(a) above to its own lands, elect a minimum tree cover of between 10 per cent and 25 per cent, and a minimum land area of between 0.3 hectares and 1.0 hectare, and shall specify its elections in its pre-commitment period report submitted under Article 7.4. This election is irrevocable.*[(USA)]

34. A definition of "forest" that is consistent with the FAO definition of forest should be included in the COP 6 decision. Some limited discretion regarding the canopy cover threshold and minimum area size is appropriate. Parties should be required to choose specific values in advance of the first commitment period. The definition of "forest" used by a Party must be applied consistently over time, and a Party should use the same definition of forest when accounting for afforestation, reforestation, and deforestation. A Party may elect only one definition of forest.[4,(USA)]

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[3] This material is based on the FAO definition of "forest." Further work will be needed to express these ideas in legal form.[(USA)]

[4] The USA definition of forest, also used for its data submission, combines both vegetation and administrative aspects and is the FAO definition of forest with slight modifications: land with tree crowns (or equivalent stocking) of more than 10 percent and area of more than 0.37 ha (1 acre). The trees should be able to reach a minimum height of 5 metres (16 feet) at maturity in situ. Stands may consist of either closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground, or open forest formations with a continuous vegetation cover in which tree crown cover exceeds 10 percent and is not currently developed for non-forest use. Young natural stands and all plantations established for forestry purposes which have yet to reach a crown density of 10 percent or tree height of 5 metres (16 feet) are included under forest, as are areas normally forming part of the forest which are temporarily non-stocked as a result of human intervention or natural causes but which are expected to revert to forest. The definition includes: forest nurseries and seed orchards that constitute an integral part of the forest; forest roads and trails (if less than 36 metres or 120 feet wide); cleared tracts; firebreaks; and reserves and other protected areas such as those of special environmental, scientific, historical, cultural, or spiritual interest; roadside, streamside, windbreak, and shelterbelt strips of trees with an area of more than 0.4 ha (1 acre) and a width of more than 36 metres (120 feet). Rubber plantations and cork oak stands are included. Lands predominantly used for agricultural purposes are excluded. However, marginal agricultural lands that are forested are included. Lands in

Proposal 3d: FAO definition extended to include multipurpose shelterbelts

35. The FAO definition should be extended to include multipurpose forest shelter belts artificially planted on agricultural fields and other lands.(RUS)

Proposal 4: Definition based on long-term potential for carbon storage

36. The definition should not determine the type of ecosystem, but must reflect the potential for long-term carbon sequestration.[5](POL)

Proposal 5: Definition of forest for monitoring and verification purposes

37. The definition of ARD activities can not be considered in isolation from activities under Article 3.4. Deforestation is more likely to be underreported. In this case it might be necessary to define a forest for monitoring and verification purposes. Multiple thresholds might then be necessary.(ISL)

B. Afforestation

Proposal 1a:[6] Forest establishment on lands not historically forested

38. *Afforestation is defined as the direct human-induced establishment of new forests (trees and woody vegetation) on lands which historically have not contained forests. New forests established by afforestation must cover a minimum area of 1 hectare with a minimum stand width of 10 metres. Potential canopy cover at maturity under current management practices is not less than 20 per cent.*(AUS)

39. Establishment includes all deliberate human-induced activities to establish trees including: direct planting, artificial seeding, site preparation (fire or mechanical) and protective fencing.(AUS)

40. For afforestation *and* reforestation, definitions that require a change of land-use and the establishment of new forests on previously unforested land will facilitate identification and reporting of areas of land subject to eligible forestation activities under Article 3.3.(AUS)

Proposal 1b: Direct human-induced and natural forest establishment on historically non-forested lands

41. *"Afforestation" means the direct human-induced conversion (including planting, seeding, and natural regeneration) of land to forest that has not historically been forest.*(USA)

42. The (re)establishment of forests through natural means should be considered a form of afforestation or reforestation.(USA)

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the Conservation Reserve Program (a set-aside programme) that are planted to trees are considered forest rather than cropland.(USA)

[5] Poland proposes concentrating work on the definition of terms such as "forestry activities" instead of "forest" itself, which has the real importance when implementing the Kyoto Protocol.(POL)

[6] Proposals 1a-g do not contain time indications for the meaning of "historic", whilst proposals 3a-d do.

Proposal 1c: Forest establishment on lands historically non-forested

43. *Afforestation, reforestation and deforestation activities shall be defined in terms of conversion from non-forest land to forest and vice versa, namely:*

> *Afforestation – the establishment of forests on lands which, historically, have not contained forests.*[NZL]

44. *Given the land conversion basis of the definitions of afforestation, reforestation and deforestation, these activities, by their nature, are direct human-induced.*[NZL]

45. The activities of "afforestation, reforestation and deforestation" should be interpreted on the basis of land-use changes that have occurred since 1 January 1990, i.e. conversion from non-forest land to forest and vice versa. These interpretations are consistent with the 'definitions' in the Revised 1996 IPCC Guidelines.[NZL]

Proposal 1d: FAO and activity-based definition

46. It is proposed that Parties adopt an FAO definition and an activity-based accounting framework for ARD activities.[JPN]

Proposal 1e: Forest establishment through land-use change since 1990 on historically non-forested land

47. Afforestation is the establishment of forests due to planting, seeding or other changes in human land-use practices on areas which, historically, have not contained forests.[NOR]

48. Article 3.3 of the Kyoto Protocol limits LULUCF activities to afforestation, reforestation and deforestation and to stock changes due to such direct human-induced activities that have taken place since 1990, which should be interpreted on the basis of land-use changes that have occurred since 1990, i.e. conversion from non-forest to forest and vice versa.[NOR]

Proposal 1f: Increase of carbon stock through planting of trees

49. Afforestation and reforestation should be defined as direct human action to increase carbon stock on a site through the planting of trees. For the purposes of the Kyoto Protocol, there is no need to distinguish reforestation from afforestation. The definitions of ARD activities cannot be considered in isolation from activities under Article 3.4. One example of such a linkage is the definition of afforestation. This definition in effect sets the boundary between afforestation on the one hand and revegetation on the other. A restrictive definition of afforestation, which would exclude the planting of trees or shrubs which will not meet a given height criteria, calls for a broader definition of revegetation. There is therefore no reason to restrict the definition of reforestation and afforestation in terms of canopy cover or potential tree height.[ISL]

Proposal 1g: Establishment of forest on land previously under different land-use

50. Afforestation is artificial establishment of forest on land that was previously under different land-use. The different types of land-use are: agriculture, peat extraction, mining, and

others. Special emphasis should be given to development of artificial forests over degraded lands subject to soil erosion, weathering, and sand storms.(RUS)

Proposal 2a: Definition with high degree of flexibility

51. *Afforestation is a change in land-use that, through the establishment of a stand of trees, forms a forest.*(CAN)

52. This means adopting definitions similar to those of the FAO but allowing for a degree of flexibility for Parties to use definitions most suited to their circumstances.(CAN)

Proposal 2b: Parties allowed to use their own definitions

53. Before the outstanding issues in relation to various options on definitions of ARD mentioned in the IPCC special report on LULUCF and the corresponding accounting systems can be resolved, Parties should be given the freedom to use their own definition on ARD with appropriate carbon accounting systems, provided that there is assurance on transparency, comparability, accuracy, consistency, and completeness in reporting.(IDN)

Proposal 3a: Conversion to forest of land not forested for 50 years

54. *Afforestation is conversion to forest of land that has not supported forest for a period of at least 50 years.*[7],(FRA)

Proposal 3b: Establishment of trees on land not forested since 1990

55. Afforestation is the establishment of trees in an area of land, which previously had no forest cover, taking into account historical times. The differentiation with re- forestation is important because of its implications on management, environmental impacts and carbon sequestration potentials, mainly. For the purposes of the Kyoto Protocol, the period in which this land was not covered by forests should be counted from 1990.(BOL)

Proposal 3c: Establishment of forest on land not forested since 1990

56. Afforestation is a direct human-induced activity that establishes forests on lands where there were no forests in 1990.(CHL)

Proposal 3d: Establishment of forest condition on land not forested for 20 years

57. Afforestation: Establishment of forest condition[8] on lands where there were no forests during the last 20 years prior to the establishment of the forest condition, whenever these activities have been performed since 1990.(CRI)

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[7] According to the IPCC special report "Afforestation is usually defined as the establishment of land that has been without forest for a period of time (eg 20 to 50 years) and was previously under a different *land-use*" (SPM para 24).(FRA)

[8] Forest and non-forest condition are respectively defined as any natural land ecosystem or forest plantation, whose live vegetal above-ground biomass is superior or inferior to the threshold pre-established at 10 per cent of its potential biomass, which varies according to the biome.(CRI)

Proposal 4: Definition includes planting trees and natural succession

58. Afforestation cannot be limited to planting new trees only (in the meaning of artificial afforestation described under FAO). The natural succession leading to natural establishment of tree cover and creation of a forest ecosystem should also be considered as "afforestation".(POL)

Table 1: Summary of proposed afforestation definitions

Australia	Afforestation is defined as the direct human-induced establishment of new forests (trees and woody vegetation) on lands which historically have not contained forests.
Bolivia	Afforestation is the establishment of trees in an area of land which had no forest cover since 1990.
Canada	Afforestation is a change in land-use that, through the establishment of a stand of trees, forms a forest.
Chile	Afforestation is a direct human-induced activity that establishes forests in lands where there were no forests in 1990.
Costa Rica	Afforestation is the establishment of a forest on lands where forests did not exist during the last 20 years.
EU	Afforestation is conversion to forest of land that has not supported forest for a period of at least 50 years.
Iceland	Afforestation and reforestation should be defined as direct human action to increase carbon stock on a site through the planting of trees.
Indonesia	Parties should be given the freedom to use their own definition of ARD with an appropriate carbon accounting system, provided that there is assurance on transparency, comparability, accuracy, consistency and completeness in reporting.
Japan	Parties should adopt an FAO definition and an activity-based accounting framework for ARD activities.
New Zealand	Afforestation is the establishment of forests on lands which, historically, have not contained forests. ARD based on land-use change since 1990.
Norway	Afforestation is the establishment of forests due to planting, seeding or other changes in human land-use practices on areas which, historically, have not contained forests. ARD based on land-use change since 1990.
Russian Federation	Afforestation is the artificial establishment of forest on land that was previously under different land-use.
United States	"Afforestation" means the direct human-induced conversion (including planting, seeding, and natural regeneration) of land to forest that has not historically been forest.

C. Reforestation

Proposal 1a:[9] Forest establishment on historically forested land, 5 yr. non forest use

59. *Reforestation is defined as the direct human-induced establishment of forests (trees and woody vegetation) on lands which historically have previously contained forests but which have been converted to some other use. Prior to reforestation, the land must have been under some non-forest use for a period of not less than five years. New forests established by reforestation must cover a minimum area of 1 hectare with a minimum stand width of 10 metres. Potential canopy cover at maturity under current management practices is not less than 20 per cent.*(AUS)

[9] Proposals 1a-d contain time indications for the meaning of "historic", whilst proposals 3a-g do not.

60. *Establishment includes all deliberate human-induced activities to establish trees including: direct planting, artificial seeding, site preparation (fire or mechanical) and protective fencing.*[AUS]

61. For afforestation and reforestation, definitions that require a change of land-use and the establishment of new forests on previously unforested land will facilitate identification and reporting of areas of land subject to eligible forestation activities under Article 3.3.[AUS]

Proposal 1b: Establishment of forest on lands that contained forest 20-50 years prior to the start of the first commitment period

62. *Reforestation is conversion to forest of land that has supported forest within the past 50 years, but has been converted to other land-uses for a period of at least 20 years prior to the start of a commitment period.*[FRA]

Proposal 1c: Re-establishment of forest by direct activities or natural regeneration on lands deforested after 1990

63. Reforestation is the re-establishment of forests by direct human-induced activities or natural regeneration in landscape units deforested after 1990. Replacing a forest existing in 1990 and clear-cut later would be considered "reforestation" for the Kyoto Protocol purposes.[CHL]

Proposal 1d: Establishment of trees on lands covered by forest in 1990

64. Reforestation is the establishment of trees in an area of land that previously had forest or a forest ecosystem, taking into account historical times. The differentiation of this activity from afforestation is important because of its implications on management, environmental impacts and carbon sequestration potentials, mainly. For the purposes of the Kyoto Protocol, the period in which this land was covered by forests should be counted from 1990.[BOL]

Proposal 2a: Definition with high degree of flexibility

65. *Reforestation is a land-use practice that, through the establishment of a stand of trees, forms a forest.* This means adopting definitions similar to those of the FAO but allowing for a degree of flexibility for Parties to use definitions most suited to their circumstances. It is noted that when a forest is temporarily non-stocked after harvesting it is still being used as a forest. Also, since a land-use practice necessarily involves human activity, unassisted natural regeneration of forest after natural disturbances is not included.[CAN]

Proposal 2b: Parties allowed to use their own ARD definitions

66. Before the outstanding issues in relation to various options on definitions of ARD mentioned in the IPCC special report on LULUCF and the corresponding accounting systems can be resolved, Parties should be given the freedom to use their own definition of ARD with an appropriate carbon accounting system, provided that there is assurance on transparency, comparability, accuracy, consistency and completeness in reporting.[IDN]

Proposal 3a: Establishment of trees on lands historically converted to non-forest use

67. *Afforestation, reforestation and deforestation activities shall be defined in terms of conversion from non-forest land to forest and vice versa, namely:*

> *Reforestation – the establishment of forests on lands which, historically, have previously contained forests but which have been converted to some other use.*(NZL)

68. *Given the land conversion basis of the definitions of afforestation, reforestation and deforestation, these activities, by their nature, are direct human-induced.*(NZL)

69. *Reforestation will not be considered to have occurred in the circumstance where units of land that are forested in 2008-2012 were also forested in 1990, even where a temporary conversion of land-use may have occurred between 1990 and 2008.*(NZL)

70. The activities of afforestation, reforestation and deforestation should be interpreted on the basis of land-use changes that have occurred since 1 January 1990, i.e. conversion from non-forest land to forest and vice versa. These interpretations are consistent with the 'definitions' in the Revised 1996 IPCC Guidelines.(NZL)

Proposal 3b: Establishment of trees on lands historically converted to non-forest use

71. *"Reforestation" means the direct human-induced conversion (including planting, seeding, and natural regeneration) of land to forest that has historically been forest but has been converted to land that is not forest.*(USA)

72. The (re)establishment of forests through natural means should be considered a form of afforestation or reforestation. The IPCC approach has several important strengths and its application under Article 3.3 should be supported.(USA)

Proposal 3c: Establishment of forest on lands deforested since 1990

73. Reforestation: Re-establishment of forest condition[10] in lands that had been deforested, according to the definition of deforestation given below, whenever these activities have been performed since 1990.(CRI)

Proposal 3d: FAO definition with activity-based accounting

74. It is proposed that Parties adopt an FAO definition and an activity-based accounting framework for ARD activities.(JPN)

Proposal 3e: Direct human action to increase carbon stock

75. Afforestation and reforestation should be defined as direct human action to increase carbon stock on a site through the planting of trees. For the purposes of the Kyoto Protocol, there is no need to distinguish reforestation from afforestation. There is no reason to restrict the definition of reforestation and afforestation in terms of canopy cover or potential tree height.

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[10] Forest and non-forest condition are respectively defined as any natural land ecosystem or forest plantation, whose live vegetal above-ground biomass is superior or inferior to the threshold pre-established at 10 per cent of its potential biomass, which varies according to the biome.(CRI)

The definition of ARD activities can not be considered in isolation from activities under Article 3.4.[ISL]

Proposal 3f: Establishment of forest on lands historically converted to some other use.

76. Reforestation is the establishment of forests due to planting, seeding or other human-induced activities on areas which, historically, have previously contained forests but which have been converted to some other use.[NOR]

77. Article 3.3 of the Kyoto Protocol limits LULUCF activities to afforestation, reforestation and deforestation and to stock changes due to such direct human-induced activities that have taken place since 1990, which should be interpreted on the basis of land-use changes that have occurred since 1990, i.e. conversion from non-forest to forest and vice versa. Following the reforestation definition in the Revised 1996 IPCC Guidelines would prevent Parties from obtaining credits for converting natural forest to plantations, and would also be consistent with the requirement laid down in Article 5.2 of the Kyoto Protocol.[NOR]

Proposal 3g: Artificial establishment of forest on non-forested or sparsely forested lands

78. Reforestation is artificial establishment of forest on forested lands that at present are not covered by forest or whose forest cover is insufficient. These lands include sparsely forested territories (with low density forest cover), areas of former forest fires, dead (or declining) stands, harvesting areas, and large glades (or other open sites) in forests.[RUS]

Proposal 4: Need to differentiate between reforestation and revegetation

79. Planting trees after harvesting should be called "regeneration" and divided into two meanings: artificial (tree planting after clear cutting) and natural (by natural ecological succession). It seems very important to distinguish those two terms: reforestation and regeneration as far as different methods are being used for soil preparation, which can significantly increase or decrease the CO_2 emission levels from the forest soil.[POL]

Table 2: Summary of proposed reforestation definitions

Australia	Reforestation is defined as the direct human-induced establishment of forests (trees and woody vegetation) on lands which historically have previously contained forests but which have been converted to some other use. Prior to reforestation, the land must have been under some non-forest use for a period of not less than five years.
Bolivia	Reforestation is the establishment of trees in an area of land that previously had forest or a forest ecosystem, taking into account historical times.
Canada	Reforestation is a land-use practice that, through the establishment of a stand of trees, forms a forest.
Chile	Reforestation is the re-establishment of forests by direct human-induced activities or natural regeneration in landscape units deforested after 1990.
Costa Rica	Re-establishment of forest condition in lands that had been deforested, according to the definition of deforestation given below, whenever these activities have been performed since 1990.
EU	Reforestation is conversion to forest of land that has supported forest within the past 50 years, but has been converted to other land-uses for a period of at least 20 years prior to the start of a commitment period.
Iceland	Afforestation and reforestation should be defined as direct human action to increase carbon stock on a site through the planting of trees.
Indonesia	Parties should be given the freedom to use their own definitions on ARD.
Japan	It is proposed that Parties adopt an FAO definition and an activity-based accounting framework for ARD activities.
New Zealand	Reforestation is the establishment of forests on lands which, historically, have previously contained forests but which have been converted to some other use.
Norway	Reforestation is the establishment of forests due to planting, seeding or other human-induced activities on areas which, historically, have previously contained forests but which have been converted to some other use.
Russian Federation	Reforestation is artificial establishment of forest on forested lands that at present are not covered by forest or whose forest cover is insufficient.
United States	"Reforestation" means the direct human-induced conversion (including planting, seeding, and natural regeneration) of land to forest that has historically been forest but has been converted to land that is not forest.

D. Deforestation

Proposal 1a: Conversion of forest to non-forest, including degradation but not harvesting

80. *Deforestation is defined as direct human-induced forest conversion which is frequently accompanied by burning. This does not include harvesting or other practices which occur as part of ongoing commercial forestry.*[AUS]

81. *Forest conversion means the transition of forested land to non-forested land as a result of direct human-induced removal of trees.*[AUS]

82. *For the purposes of accounting for deforestation under Article 3.3, Parties shall determine canopy cover for each forested area within their borders to be accounted for on the basis of a minimum area of 1 hectare with a minimum stand width of 10 metres.*[AUS]

83. *Deforestation will be accounted when the proportion of canopy cover per hectare on a given area of forested land (land with trees and woody vegetation) is reduced by 30 per cent or more through forest conversion as a result of direct human-induced removal of trees.*(AUS)

84. Parties will be required to determine canopy cover per area of land at the hectare level for their entire forest estate in 1990.(AUS)

Proposal 1b: Conversion of forest to non-forest

85. *Deforestation is conversion of forest land to non-forest land.*(FRA)

Proposal 1c: Conversion of forest land to some other use, distinguished from harvesting

86. *Afforestation, reforestation and deforestation activities shall be defined in terms of conversion from non-forest land to forest and vice versa, namely:*

Deforestation – the conversion of forest land to some other use.(NZL)

87. *Annex B Parties shall report on the means by which harvesting or some other forest disturbance intended to be immediately followed by the re-establishment of the forest, has been distinguished from deforestation when, during 2008-2012 by comparison with 1990, it may otherwise appear that deforestation has occurred.*(NZL)

88. *Given the land conversion basis of the definitions of afforestation, reforestation and deforestation, these activities, by their nature, are direct human-induced.*(NZL)

89. The activities of "afforestation, reforestation and deforestation" should be interpreted on the basis of land-use changes that have occurred since 1 January 1990, i.e. conversion from non-forest land to forest and vice versa. These interpretations are consistent with the 'definitions' in the Revised 1996 IPCC Guidelines.(NZL)

Proposal 1d: Direct human-induced conversion of forest to non-forest land

90. *"Deforestation" means the direct human-induced conversion of forest to land that is not forest.*(USA)

91. When a forest area is harvested, it may not be immediately obvious whether a long-term land-use change has occurred or whether the land is in the process of being replanted/regenerated: deforestation may not be confirmed until some years after the clearing – possibly not until the following commitment period.(USA)

Proposal 1e: Conversion of forest to non-forest through economic activity

92. **Deforestation:** Conversion of forest to non-forest condition[11] for economic purposes by human activity, whenever these activities have been performed since 1990.(CRI)

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[11] Forest and non-forest condition are respectively defined as any natural land ecosystem or forest plantation, whose live vegetal above-ground biomass is superior or inferior to the threshold pre-established at 10 per cent of its potential biomass, which varies according to the biome.

Proposal 1f: Conversion of forest to non-forest, not including harvesting

93. Deforestation is the conversion of forest land to other land. Article 3.3 of the Kyoto Protocol limits LULUCF activities to afforestation, reforestation and deforestation and to stock changes due to such direct human-induced activities that have taken place since 1990, which should be interpreted on the basis of land-use changes that have occurred since 1990, i.e. conversion from non-forest to forest and vice versa. Harvesting as part of a forest management system should not be defined as deforestation. Such a definition would include conversion of forests to agriculture land, roads, housing and other urban areas. All carbon stock changes due to the defined deforestation activities should be included.[NOR]

Proposal 1g: Artificial conversion of forest to non-forest land, including fires, pollution

94. Deforestation is artificial conversion of forested lands to non-forest territories as a result of various human activities including unfavourable anthropogenic impacts (human-induced forest fires, industrial pollution, etc.).[RUS]

Proposal 2a: Land-use change that removes a forest

95. ***Deforestation*** *is a land-use change that removes a forest.*[CAN]

96. This means adopting definitions similar to those of the FAO but allowing for a degree of flexibility for Parties to use definitions most suited to their circumstances.[CAN]

Proposal 2b: FAO definition using activity-based accounting

97. It is proposed that Parties adopt an FAO definition and an activity-based accounting framework for ARD activities.[JPN]

Proposal 3: Natural or human-induced change of a forest to another land-use

98. Deforestation: The natural or direct human-induced land-use change resulting in the conversion of forests to other land-use, in a given set of landscape units in a given time period, resulting in a verifiable change in carbon stocks.[CHL]

Proposal 4: Parties allowed to use their own definitions

99. Before the outstanding issues in relation to various options on definitions of ARD mentioned in the IPCC special report on LULUCF and the corresponding accounting systems can be resolved, Parties should be given the freedom to use their own definition of ARD with an appropriate carbon accounting system, provided that there is assurance on transparency, comparability, accuracy, consistency and completeness in reporting.[IDN]

Proposal 5: Definition based on human activity not including clear-cutting

100. Deforestation should not be considered as one of the "forestry activities", but as another type of human activity: land-use change. Clear-cutting cannot be considered as deforestation, because such practice belongs to the scope of forest management activities and does not create new, long-term deforested areas but is followed by planting new trees on this area.[POL]

Proposal 6: All direct human-induced loss of forest cover, other than sustainable forest management

101. Deforestation is the process in which a human-induced loss in the quantity of biomass of a forest occurs, with a tendency to convert land covered by forest into land with no forest or forest ecosystem. Sustainable management of forests for timber production, although generally resulting in a biomass loss, and thus in a release of carbon to the atmosphere, should not be considered deforestation. All direct human-induced loss of forest cover, other than sustainable forest management, should be reported as deforestation.[BOL]

102. Prevention (avoidance) of deforestation: Prevention of deforestation is a comprehensive group of activities which starts a process contrary to deforestation, and is directed at its deterrence. For accounting purposes, it reduces emissions by sources by addressing one of the main sources of GHG emissions in the LULUCF sector. Avoidance of deforestation results in conservation of the biomass in a forest.[BOL]

Table 3: Summary of proposed deforestation definitions

Australia	Deforestation is defined as direct human-induced forest conversion which is frequently accompanied by burning. Commercial forestry practices not included.
Bolivia	Deforestation is the process in which a human-induced loss in the quantity of biomass of a forest occurs, with a tendency to convert a land covered by forest into a land with no forest or forest ecosystem.
Canada	Deforestation is a land-use change that removes a forest.
Chile	The natural or direct human-induced land-use change resulting in the conversion of forests to other land-use, in a given set of landscape units in a given time period, resulting in a verifiable change in carbon stocks.
Costa Rica	Conversion of forest to non-forest condition12 for economic purposes by human activity, whenever these activities have been performed since 1990.
EU	Deforestation is conversion of forest land to non-forest land.
Indonesia	Parties should be given the freedom to use their own definitions of ARD.
Japan	Japan proposes that Parties adopt an FAO definition and an activity-based accounting framework for ARD activities.
New Zealand	Deforestation – the conversion of forest land to some other use.
Norway	Deforestation: the conversion of forest land to other land.
Poland	Deforestation should not be considered as one of the "forestry activities", but as another type of human activity: land-use change.
Russia	Deforestation is artificial conversion of forested lands to non-forest territories as a result of various human activities.
USA	Deforestation means the direct human-induced conversion of forest to land that is not forest.

12 Forest and non-forest condition are respectively defined as any natural land ecosystem or forest plantation, whose live vegetal above-ground biomass is superior or inferior to the threshold pre-established at 10 per cent of its potential biomass, which varies according to the biome.

E. Carbon accounting for Article 3.3 activities

1. Eligibility of activities for inclusion

Proposal 1: Direct human-induced since 1990

103. *For Article 3.3, eligible activities are direct human-induced afforestation, reforestation and deforestation that have taken place in 1990 or in a year subsequent to 1990 but before the end of the commitment period. (Definitions for afforestation, reforestation and deforestation shall be as provided in this submission). To be directly human-induced, afforestation, reforestation and deforestation must result from a deliberate human action or intervention.*[AUS]

Proposal 2a: Consistency with multilateral environmental agreements

104. *Implementation of the activities included under the provisions of Article 3.3 shall be consistent with the Convention on Biological Diversity, the Rio Forest Principles, and Agenda 21, and take into account the ongoing intergovernmental forest policy dialogue.*[FRA]

105. *Parties shall report to the relevant international organizations on how implementation of the activities included under the provisions of Article 3.3 are consistent with the Convention on Biological Diversity, the Rio Forest Principles, and Agenda 21 and are taking into account the ongoing intergovernmental forest policy dialogue.*[FRA]

2. Start of accounting period

Proposal 1: Accounting of changes during commitment period

106. *Parties are required to account for changes in greenhouse gas emissions that occur during the commitment period on areas of land where afforestation, reforestation and deforestation have taken place, commencing either in 1990 or in a year subsequent to 1990 but before the end of the commitment period.*[AUS]

107. *For Article 3.3, carbon dioxide emissions are to be measured as changes in carbon stocks by comparing the carbon stocks in 2012 with the carbon stocks in 2008. In the event that an activity commences during the commitment period, the changes in carbon stocks are to be measured by reference to the carbon stocks at the start year. Changes in emissions for non-carbon dioxide gases (methane and nitrous oxide) shall also be accounted for.*[13,AUS]

Proposal 2a: Accounting starts with activity, continues indefinitely

108. *Once units of land are ascertained to have been subject to afforestation, reforestation and deforestation activities carried out since 1990 by Annex B Parties, changes of carbon stocks on such land units shall be accounted for from the time the activity started or 2008, whichever is later, and shall be accounted for in all subsequent commitment periods.*[NZL]

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[13] The SBSTA should invite the IPCC to develop such accounting methodologies as part of the IPCC work on LULUCF methodologies, as requested by the SBSTA at its tenth session.

109. *In satisfying the intent of decision 9/CP.4 to account for net emissions or removals over the commitment period from increases in carbon stock from since 1990 afforestation and reforestation and decreases in carbon stock from since 1990 deforestation, Annex B Parties may account for increases and decreases in carbon stock during the commitment period as soon as data are reported and reviewed pursuant to Articles 7 and 8.*[NZL]

Proposal 2c: Accounting starts with activity, continues indefinitely

110. *Accounting of carbon stock changes during the commitment period shall begin with the onset of the activity and shall include above-ground biomass, roots, litter and forest soil organic matter.*[FRA]

3. Carbon pools

Proposal 1a: Including all pools

111. *To measure changes in carbon stocks, relevant carbon pools shall include above-ground biomass, litter and woody debris, below-ground biomass, soil carbon and harvested materials.*[AUS] *The methodologies for accounting for harvested wood shall be those given in the 1996 Revised IPCC Guidelines as required by Article 5.2.*[AUS]

Proposal 1b: Including all pools

112. All carbon biotic stocks should be included under afforestation, reforestation and deforestation, provided they can be measured in a verifiable way. This means that changes in the whole tree biomass should be considered, including the stem wood, branches, tops, stumps and roots. In addition, it is particularly important to include verifiable changes in carbon stocks in forest soils linked to the activities included under Article 3.3. Forest establishment on carbon rich soil, e.g. peatland, could involve a carbon loss to the atmosphere rather than a carbon sink. On the other hand, afforestation on previous agricultural land would normally increase the carbon stock in soil.[NOR]

Proposal 1d: Including all pools

113. *Parties shall account for all carbon pools that are sources as a result of afforestation, reforestation and deforestation since 1990, but may choose not to account for a given pool in a commitment period if they provide transparent and verifiable information demonstrating that it is not a source.*[CAN]

Proposal 1e: Including all pools; litter and soil organic matter from afforestation and reforestation need not be accounted for if pools are increasing

114. Accounting of carbon stock changes during the commitment period shall begin with the onset of the activity and shall include above-ground biomass, roots, litter and forest soil organic matter.[FRA]

115. *Carbon stock changes in litter and forest soil organic matter resulting from afforestation and reforestation activities need not be accounted for in detail provided these pools are*

increasing as estimated in accordance with methodologies adopted by the COP.[14] *In this case the increase shall not be used to help meet commitments under Article 3 of the Kyoto Protocol.* (FRA)

Proposal 2: Including emissions from soils associated with deforestation

116. For a proper accounting of emissions coming from deforestation and partial deforestation, committed carbon emissions from soils must be properly addressed, either debiting all committed emissions in the period of deforestation or assigning them to subsequent periods. (BOL)

Proposal 3: Soil carbon not counted

117. Activity-based accounting incorporates only increases in the amount of carbon sequestered in soil resulting from the growth of plant afforested. Since excluding soil carbon will underestimate the credit accrued, it will be acceptable not to include soil carbon in the accounting. Changes in carbon stock in soil and residual organic matter are not counted. (JPN)

Proposal 4: Only above-ground biomass counted

118. In the case of accounting adjustments of emission inventories as per Article 3.3 of the Kyoto Protocol, and measured as verifiable net changes in greenhouse gas emissions by sources and removal by sinks from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation, only those relevant carbon deposits that can be measured and monitored, limited to live vegetal above-ground biomass, shall be accounted. (CRI)

4. Non-CO_2 gases

Proposal 1a: Non-CO_2 GHGs accounted for

119. *For Article 3.3 carbon dioxide emissions are to be measured as changes in carbon stocks by comparing the carbon stocks in 2012 with the carbon stocks in 2008. In the event that an activity commences during the commitment period, the changes in carbon stocks are to be measured by reference to the carbon stocks at the start year. Changes in emissions for non-carbon dioxide gases (methane and nitrous oxide) shall also be accounted for.* (AUS)[15]

Proposal 1b: Non-CO_2 GHGs accounted for

120. *Emissions of non-CO_2 greenhouse gases covered by the Kyoto Protocol and resulting from Article 3.3 activities shall be estimated and reported as information items in Parties' greenhouse gas inventories in accordance with methodologies agreed by the COP.* (FRA)

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[14] These methodologies would take account of the Revised 1996 IPCC Guidelines, possibly to be revised, and any associated work on good practices.

[15] The SBSTA should invite the IPCC to develop such accounting methodologies as part of the IPCC work on LULUCF methodologies, as requested by the SBSTA at its tenth session.

Proposal 1c: Non-CO_2 GHGs accounted for

121. In principal, impacts on all greenhouse gases, in practice CO_2, CH_4 and N_2O, should be included under Article 3.3, provided the net emissions could be measured in a verifiable way and effects on CH_4 and N_2O should be included, if measurable within a given level of significance.(NOR)

Proposal 2: Nitrogen fertilization and wetland non-CO_2 emissions

122. For the accounting of GHGs other than CO_2, only accounting in special cases, such as those GHGs released from nitrogen fertilization and from planting on wetland, should be considered.(JPN)

5. Direct human-induced

Proposal 1a: Deliberate and intended

123. *To be directly human-induced, afforestation, reforestation and deforestation must result from a deliberate human action or intervention.*(AUS)

Proposal 1b: Deliberate and intended

124. *The requirement for direct human-induced activities signifies intent to establish forest by planting, seeding, or natural regeneration, or the intent to deforest, traceable to decisions affecting the land areas concerned. This requirement applies in all cases where forest land is converted to another land-use.*(FRA)

125. *For determination of this total forest carbon stock, a Party may choose to exclude carbon stock changes due to damage by natural disturbances from its inventory estimates.*[16](FRA)

Proposal 1c: All practices to establish forests considered direct human-induced

126. Related to afforestation and reforestation, direct human-induced activities should include all practices that are implemented with the purpose of establishing forests. This includes planting, seeding and other practices, which will accelerate the establishment of the forests. This would include natural revegetation through different practices, such as seed tree- and shelterwood systems.(NOR)

Proposal 2: Deforestation by verifiable natural causes is not direct human-induced

127. Deforestation by verifiable natural causes can be attributed to non-direct human-induced activities, such as landslides, avalanches, volcanic eruptions, floods and tsunamis, and also caused by a change in site ecological conditions such as salinization, desertification and adverse climate change, which are uncontrollable by immediate direct human-induced activities.(CHL)

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[16] This provision is inserted to ensure that the forest as a whole cannot be degraded whilst gaining credits under Article 3.3 from post 1990 establishment.(FRA)

Proposal 3: Natural succession on post-agricultural areas considered human-induced

128. Natural succession on post-agricultural areas should be considered as "human-induced" activity and therefore should be included in the definition of afforestation.(POL)

6. Rules, modalities and guidelines

6.1. Accounting framework

Proposal 1a: Full accounting after first commitment period, harvest-regeneration cycle not included

129. An accounting framework for Article 3.3 should be founded on an understanding that the ARD activities include only land-use changes that have occurred since 1990. This implies that afforestation, reforestation and deforestation should only include conversion from non-forest to forest and vice versa. Hence, re-establishment of tree cover after clear-cut harvesting should not be included.(NOR)

Proposal 1b: Harvest-regeneration cycle not included until land is included under Article3.3

130. Identification of eligible activities would be done on the basis of the definitions for afforestation, reforestation and deforestation. Associated land units on which these activities occur would then be identified.(AUS)

131. Under the Article 3.3 lands accounting approach, Parties are required to identify afforestation, reforestation or deforestation activities. These activities will function to draw a given area of land into the Article 3.3 accounting system.(AUS)

132. Under the definitional approach for afforestation, reforestation and deforestation, harvesting which occurs as part of the commercial forestry cycle would not be defined as deforestation. Similarly regeneration following harvesting would not be defined as reforestation.(AUS)

133. Once an area of land enters the Article 3.3 accounting system as a result of afforestation, reforestation and deforestation, Parties would be required to account for all changes in carbon stocks occurring on that area of land.(AUS)

134. This would include changes in carbon stocks and emissions that are the result of harvesting and replanting on areas of Article 3.3 lands subject to commercial forestry as well as other changes in emissions that are the result of human and non-human-induced effects.(AUS)

Proposal 2: Land-based accounting

135. The measuring and reporting of changes in carbon stocks, for Annex B countries, in compliance with commitments acquired under the KP, should be done on a national basis (land-based accounting system) with a very specific definition of activities, in an analogous form as in current national inventory methodologies, just as done until now, but only adjusting the definitions of forest and deforestation, and the Guidelines to properly report changes in biomass and soil carbon.(BOL)

Proposal 3: Accounting system subject to review

136. Definitional scenarios of ARD and the corresponding carbon accounting systems on LULUCF should be seen as a dynamic process, which need to be reviewed and revised, as appropriate, and the necessary adjustment of methodology should be applied.(IDN)

Proposal 4: FAO definition and activity-based accounting

137. It is proposed that Parties adopt an FAO definition and an activity-based accounting framework for ARD activities.(JPN)

6.2. Accounting rules

Proposal 1: Activity initiated accounting, limits on debits and credits

138. *Sub-rule 1: Credits (for sequestration) calculated at the stand level from reforestation following deforestation will be awarded only to the extent that carbon stocks have increased above levels present before the deforestation event took place.*(AUS)

139. *Sub-rule 2: Debits (emissions) calculated at the stand level from harvesting and other natural and human-induced effects following afforestation and reforestation will not be greater than credits earned from sequestration.*(AUS)

140. *The adjustment to a Party's assigned amount shall be equal to verifiable changes in carbon stocks and greenhouse gas emissions during the period 2008 to 2012 resulting from direct human-induced activities of afforestation, reforestation and deforestation since 1 January 1990. Where the result of this calculation is a net sink, this value shall be added to the Party's assigned amount. Where the result of this calculation is a net emission, this value shall be subtracted from the Party's assigned amount.*[17](AUS)

141. *For Article 3.3 carbon dioxide emissions are to be measured as changes in carbon stocks by comparing the carbon stocks in 2012 with the carbon stocks in 2008. In the event that an activity commences during the commitment period, the changes in carbon stocks are to be measured by reference to the carbon stocks at the start year. Changes in emissions for non-carbon dioxide gases (methane and nitrous oxide) shall also be accounted for.*[18](AUS)

142. *This means Parties shall calculate changes in carbon stocks by comparing the carbon stocks in 2012 with the carbon stocks in 2008.*(AUS)

Proposal 2: Continuous accounting, no requirement to account for all sinks

143. *Verifiable changes in carbon stocks which Parties include in their accounting and which result from afforestation, reforestation and deforestation since 1990 shall be measured as the change in carbon stocks between the beginning and end of a commitment period.*(CAN)

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[17] As per COP decision 9/CP.4.

[18] The SBSTA should invite the IPCC to develop such accounting methodologies as part of the IPCC work on LULUCF methodologies, as requested by the SBSTA at its tenth session.

144. *Once land enters the accounting it shall be included in the first and all subsequent commitment periods.*(CAN)

145. *Parties shall account for all carbon pools that are sources as a result of afforestation, reforestation and deforestation since 1990, but may choose not to account for a given pool in a commitment period if they provide transparent and verifiable information demonstrating that it is not a source.*(CAN)

Proposal 3: Net ARD area accounting, no requirement to account for all sinks, limit on credits

146. *The area counted as deforestation during the first commitment period may be reduced by areas of afforestation and reforestation with the same or greater potential carbon content, provided that:*

(a) *Areas of afforestation or reforestation used in this way are not otherwise used to help meet commitments under the provisions of Article 3.3;*

(b) *The total deforested area during the first commitment period is less than 1 per cent of the total forest area in a country at the beginning of the commitment period;*

(c) *The total human-induced forest carbon stock change during the commitment period, due to activities including ARD since 1990, is not negative;*

(d) *National forest policies and measures are established, are consistent with the ecosystem approach under the Convention on Biological Diversity and ensure sustainable forest development and management.*(FRA)

147. *A Party shall not use carbon stock changes corresponding to Article 3.3 activities to help meet commitments through additions to its assigned amount if its total forest carbon stock is falling as shown by its greenhouse gas inventory estimated in accordance with the Revised 1996 IPCC Guidelines and any good practices adopted by the COP. For determination of this total forest carbon stock, a Party may choose to exclude carbon stock changes due to damage by natural disturbances from its inventory estimates.*[19](FRA)

148. *Carbon stock changes in litter and forest soil organic matter resulting from afforestation and reforestation activities need not be accounted for in detail provided these pools are increasing as estimated in accordance with methodologies adopted by the COP.*[20] *In this case the increase shall not be used to help meet commitments under Article 3 of the Kyoto Protocol.*(FRA)

Proposal 4: No credits for deforestation followed by reforestation between 1990-2008, limit on debits and credits

149. *Once units of land are ascertained to have been subject to afforestation, reforestation and deforestation activities carried out since 1990 by Annex B Parties, changes of carbon stocks*

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[19] This provision is inserted to ensure that the forest as a whole cannot be degraded whilst gaining credits under Article 3.3 from post-1990 establishment.

[20] These methodologies would take account of the Revised 1996 IPCC Guidelines, possibly to be revised, and any associated work on good practices. (FRA)

on such land units shall be accounted for from the time the activity started or 2008, which ever is later, and shall be accounted for in all subsequent commitment periods.[NZL]

150. *In satisfying the intent of decision 9/CP.4 to account for net emissions or removals over the commitment period from increases in carbon stock from since 1990 afforestation and reforestation and decreases in carbon stock from since 1990 deforestation, Annex B Parties may account for increases and decreases in carbon stock during the commitment period as soon as data is reported and reviewed pursuant to Articles 7 and 8.*[NZL]

151. *Reforestation will not be considered to have occurred in the circumstance where units of land that are forested in 2008-2012 were also forested in 1990, even where a temporary conversion of land-use may have occurred between 1990 and 2008.*[NZL]

152. *During the first commitment period, Annex B Parties which report a net decrease in carbon stock due to afforestation, reforestation and deforestation activities carried out since 1990 shall not have their assigned amount reduced pursuant to decision 9/CP.4 in the circumstance where, by comparison with 1990, such Parties' forest area has increased and where during 2008-2012, if the emissions and removals from pre-1990 forests are also considered, overall carbon stocks have not decreased. Where this situation occurs such Parties' assigned amount shall be neither increased nor decreased.*[NZL]

153. *During the first and subsequent commitment periods, in the circumstance where there are reductions in carbon stock on units of land that have been subject to afforestation or reforestation activities carried out since 1990, the amount of the reduction in assigned amount shall be limited to the amount of any previous increase in assigned amount for these same land units.*[NZL]

Proposal 5: 1990 baseline for ARD

154. As Article 3.3 states that only direct human-induced land-use change and forestry activities - the latter limited to afforestation, reforestation and deforestation - resulting in changes in carbon stocks can be reported, the base year 1990 is a sort of "thin red line" that separates the existing carbon stocks in 1990 and the actual carbon stocks in the first commitment period.[CHL]

155. Since afforestation, reforestation and deforestation are activities that cause land-use change, the carbon stock contained in the forests existing in 1990 at a national level is the carbon stock baseline to calculate the changes that could occur after that year.[CHL]

Proposal 6: Measuring stock changes over commitment period

156. The adoption of an FAO definition and an activity-based accounting framework for ARD activities involves identifying the land where ARD has been occurring since 1990, and counting changes in carbon stocks during the period 2008-2012 as removals when the amount of carbon stock increases and as emissions when it decreases.[JPN]

Proposal 7: Debits limited if total net increase in carbon stocks reported

157. Parties which report a decrease in carbon stocks resulting from the sum of ARD activities since 1990 under Article 3.3 should not have their assigned amount reduced, if they can verify

that their total forest carbon stock has increased since 1990 and during the first commitment period.(NOR)

6.3 Contiguous commitment periods

Proposal 1a: Continued reporting required

158. *Changes in greenhouse gas emissions and carbon stocks on areas of land where human-induced afforestation, reforestation and deforestation have taken place since 1990 must be accounted for over contiguous commitment periods.*(AUS)

Proposal 1b: Continued reporting required

159. To promote permanence with regard to sequestration of CO_2, accounted for in the first commitment period the land resulting from afforestation, reforestation or deforestation must remain within the accounting system for the second and subsequent commitment periods.(NOR)

6.4 Size of assessment unit

Proposal 1: Minimum assessment unit of 1 hectare

160. *For the purposes of accounting for deforestation under Article 3.3, Parties shall determine canopy cover for each forested area within their borders to be accounted for on the basis of a minimum area of 1 hectare with a minimum stand width of 10 metres.*(AUS)

Proposal 2: Maximum assessment unit of 10 hectares

161. *Spatial assessment related to forests shall be conducted with a resolution no larger than 10 ha.*(FRA)

7. Proposals for future work

Proposal 1: Methodologies for including non-CO_2 gases

162. *Accounting methodologies shall be developed and agreed by the COP to ensure that changes in emissions of gases other than carbon dioxide (methane and nitrous oxide) are accounted for.*[21](AUS)

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[21] The SBSTA should invite the IPCC to develop such accounting methodologies as part of the IPCC work on LULUCF methodologies, as requested by the SBSTA at its tenth session. (AUS)

III. HOW AND WHICH ADDITIONAL HUMAN-INDUCED ACTIVITIES MIGHT BE INCLUDED UNDER ARTICLE 3.4 INCLUDING MODALITIES, RULES AND GUIDELINES RELATED TO THESE ACTIVITIES AND THEIR ACCOUNTING

A. Additional activities

1. Proposals for the first commitment period

Proposal 1a: Inclusion of revegetation

163. *Revegetation shall be included as an additional activity in the forest category for the first and subsequent commitment periods.*[AUS]

164. *Revegetation is defined as the human-induced establishment of woody vegetation that covers a minimum area of 0.5 hectare with a minimum width in any direction of 10 metres and does not meet the definitions of afforestation or reforestation under Article 3. Eligible revegetation activities include:*

(a) *The establishment of woody vegetation to address sustainable land management;*

(b) *Windbreaks and shelterbelts;*

(c) *Environmental plantings or fencing off areas of native vegetation;*

(d) *Agroforestry planting of trees or the development of new tree crop products such as tea tree oil to encourage a more diversified and sustainable production system that leads to social, economic and environmental benefits for land-users;*

(e) *Changes in stock management practices to encourage regeneration of vegetation.*[AUS]

165. *If agreed by the COP, further specific additional activities in the agricultural soils, land-use change and forestry categories may be included under Article 3.4 for the first commitment period.*[AUS]

Proposal 1b: Inclusion of revegetation, additional and direct human-induced

166. The inclusion of additional activities, analogous to the ARD activities under Article 3.3, may be accepted for inclusion under Article 3.4 for the first commitment period. For instance revegetation of degraded non-forest lands after 1990 could be included under Article 3.4 and applied for the first commitment period, provided these activities are additional and direct human-induced and the greenhouse gas emissions by sources and removals by sinks can be measured in a verifiable way.[NOR]

Proposal 2a: Inclusion of broadly defined land-management activities

167. *The human-induced activities of forest management, cropland management, grazing land management and shelterbelts ('agricultural land management') shall be used to meet the commitments under Article 3 of each Party included in Annex I in accordance with Article 3.4.*[CAN]

168. *Subject to paragraph 211 the net greenhouse gas emissions by sources and removals by sinks of carbon dioxide resulting from forest management and agricultural land management shall be measured as the verifiable changes in all carbon stocks in the first and all subsequent commitment periods on land subject to these activities. The carbon dioxide equivalent emissions and removals of the other greenhouse gases included in Annex A to the Protocol and directly resulting from land subject to forest management and agricultural management shall also be measured and included in the accounting for the first and all subsequent commitment periods.* (CAN)

169. Parties should strive to ensure cost-effective and comprehensive inclusion of all relevant sinks and sources under Article 3.4 in the first commitment period.(CAN)

170. Accounting for only a limited range of activities means that the accounting will bear little relation to the actual impact of direct human activity on forest carbon stocks. Including the broadly defined activity of forest management under Article 3.4 is the most appropriate way to address this problem.(CAN)

171. Broadly defined activities of cropland management, grazing land and livestock management and shelterbelts (agricultural land management) should be included under Article 3.4. Management of these lands to enhance soil carbon is an important, direct human-induced removal of CO_2 from the atmosphere. The measurement and verification of soil carbon stock changes are regarded as feasible for the first commitment period. Including these activities in Article 3.4 is essential for attaining symmetrical and balanced treatment of sources and sinks.(CAN)

172. For the purposes of Article 3.4, forest management is the broad set of management activities in the forest related to multiple use values including, especially, timber production. The definition of forest for Article 3.3 would be used for Article 3.4. The full harvest-regeneration cycle would be included under the activity of forest management in Article 3.4 and forest aggradation and degradation is included in our proposal to add forest management under Article 3.4.(CAN)

Proposal 2b: Inclusion of broadly defined land-management activities

173. *If a Party meets the accounting requirements set forth in section III,*[22] *paragraph 283, it may elect to apply one or more of the additional activities specified in paragraph 176 to its assigned amount in the first commitment period, provided that these activities have taken place since 1990. The Party shall specify the additional activities it elects to apply in its pre-commitment period report submitted under Article 7.4. This election is irrevocable for the first commitment period.* (USA)

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[22] Section III, paragraph 283 reads: *Decides* that Parties shall develop, maintain and use data and measurement systems related to land-use, land-use change and forestry categories in accordance with methods included in the 1996 Revised IPCC Guidelines, as elaborated through good practice guidance approved by the COP/MOP.(USA)

Proposal 3: No activities unless scale, uncertainty and risk issues resolved

174. *No additional activities shall be used under the provisions of Article 3.4 during the first commitment period, except if the COP decides that the issues of scale, uncertainty and risk related to the sinks are resolved.*[23] (FRA)

2. Proposals for inclusion of activities in the first, second and/or subsequent commitment periods

Proposal 1a: Inclusion of broadly defined land-management activities

175. *The human-induced activities of forest management, cropland management, grazing land management and shelterbelts ("agricultural land management") shall be used to meet the commitments under Article 3 of each Party included in Annex I in accordance with Article 3.4.* (CAN)

Proposal 1b: Inclusion of broadly defined land-management activities

176. *The following additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amounts for Parties included in Annex I for the second and subsequent commitment periods:*

(a) *Forest management;*

(b) *Cropland management;*

(c) *Grazing land management.* (USA)

177. *"Management" means the human application of practices intended to control or maintain land-based resources. Management of forest includes, inter alia, commercial forestry practices. Management of cropland includes, inter alia, practices on land on which agricultural field crops are grown and on land that is considered cropland but is not being used for crop production. Management of grazing land includes, inter alia, practices aimed at manipulating the amount and type of forage and livestock produced.* (USA)

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[23] *The Council reaffirms its willingness to continue to work with other Parties to clarify the treatment of sinks in the Kyoto Protocol. The Council notes that the IPCC Special Report on Land-Use, Land-Use Change and Forestry provides information relevant to decision-making. Furthermore, country specific data and information need to be available so that Parties can make well-informed decisions on Articles 3.3 and 3.4 and 3.7 of the Kyoto Protocol. The Council reaffirms that the inclusion of sinks activities should not undermine incentives for emissions reductions nor the conservation of biological diversity. The Council has serious concerns about the scale and the scientific and other uncertainties and risks associated with sinks. The Council therefore takes the position that a decision on the inclusion of defined and limited activities associated with further sources and sinks (Article 3.4) shall not apply in the first commitment period, except if these concerns are met. Criteria will be needed to develop modalities, rules and guidelines for the application of Article 3.4 of the Kyoto Protocol before quantified objectives are fixed for the second commitment period.(...) The Council also emphasizes that any decision on definitions, methodologies and accounting rules should be consistent with sustainable forest management, including the conservation of biological diversity* (Community Strategy on Climate Change – Council Conclusions, Brussels, 23 June 2000 (9707/00)). (FRA)

178. It is proposed that, while the IPCC approach to Article 3.3 is appropriate, this is acceptable only if forest management is included in a comprehensive manner in the first commitment period pursuant to Article 3.4.[USA]

179. Forest management is an activity involving the regeneration, tending, protection, harvest, access and utilization of forest resources to meet goals defined by the forest landowner. Managed forests include industrial timberland, but do not include parks, wilderness areas, recreation areas, wildlife preserves, or other forests that are inaccessible, of low productivity, or otherwise not available or appropriate for wood production. Land with a minimal amount of management (e.g. wilderness areas) should be excluded from accounting under Article 3.3 and 3.4. A large variety of specific practices may be involved in forest management:

(a) Regeneration can involve either natural means, taking advantage of existing seed source or coppice material, or artificial means, using planting stock or direct seeding;

(b) Tending involves the manipulation of forest vegetation to meet product, species composition, habitat quality, and fire, insect and disease protection goals;

(c) Harvest systems that are efficient in material collection and delivery as well as resource conservation are a crucial part of forest management;

(d) Utilization involves the processing of raw material into a variety of products. Utilization encompasses the amount of biomass (carbon) that is removed from the forest system and the mix of products into which the biomass goes;

(e) Cropland management includes cropping systems, tillage, crop residue management, cover crops, crop rotations, irrigation, pest management, and fertilization. It also includes application of manure, composts and other organic amendments, and elimination of bare fallow rotations.[USA]

180. Tillage management practices range from conventional tillage to conservation tillage.[USA]

181. Land-use change activities that fall within cropland management include, for example, converting cropland to grassland, forest, wetlands, or urban uses. Land-use change activities also include the establishment of vegetated buffers along riparian areas, which can improve water quality, provide critical habitat, and increase carbon reservoirs.[USA]

182. Grazing land is defined by the Society for Range Management as: "a collective term that includes all lands having plants harvested by grazing without reference to land tenure or other land-uses, management, or treatment practices." Grazing land includes all land on which the primary productive use is for herbivore grazing, including permanent (or long-term) pasture and rangeland. Grazing land management encompasses all practices aimed at manipulating the amount and type of forage and livestock produced, including regulation of animal stocking rates, forage species selection, fertilization, liming and irrigation.[USA]

183. It may be desirable to include other land management activities under Article 3.4 to comprehensively account for anthropogenic LULUCF emissions and removals. For example, it may be desirable to add an activity under Article 3.4 that would include newly vegetated land.[USA]

184. If revegetated land is managed land that qualifies as forest, cropland, or grazing land, then it would clearly be included within the USA proposal for a single coherent accounting system for lands under Article 3.3 and 3.4.[USA]

Proposal 1c: Inclusion of all non-ARD activities and forest degradation

185. All human-induced activities other than ARD should be counted in Article 3.4.[BOL]

186. If the definition of deforestation does not cover all losses of forest biomass, then an equivalent activity (forest degradation) should be added to Article 3.4. If partial deforestation is not included in Article 3.3, then an equivalent activity should be added to Article 3.4, as forest degradation.[BOL]

Proposal 1d: Inclusion of land management techniques

187. Human-induced activities, aimed at reducing greenhouse gas emissions and enhancing sinks, should be included under Article 3.4. Deforestation avoidance, forest fire prevention, sustainable forest management, sustainable agroforestry, and conservation of threatened protected areas are among activities that should be included under Article 3.4.[IDN]

Proposal 1e: Inclusion of forest management and urban greening with country specificity

188. Forest management, urban greening etc. should be included in activities under Article 3.4.[JPN]

189. It is proposed that activities that lead to an increase in the amount of removals of GHGs should be treated under Article 3.4. However, it is appropriate to treat GHG emissions from agricultural soil under Article 3.1.[JPN]

190. With regard to the broad definition, it is proposed that each country should identify practices constituting each activity in accordance with the situation unique to each country.[JPN]

Proposal 1f: Flexibility, including all types of country activities

191. The list of additional human-induced activities should be flexible enough to take into consideration the specific features of each UNFCCC Party and therefore include all types of country activities that may result in absorption of greenhouse gases or may prevent their substantial emissions to the atmosphere. The list of currently performed additional human-induced activities in the Russian forest sector, and proposed for inclusion under Article 3.4, includes:

(a) Control of forest fires and insect outbreaks;

(b) Artificial promotion of natural regeneration;

(c) Artificial reconstruction of forest stands;

(d) Forest management activities.[RUS]

192. Activities to conserve and improve the fertility of cultivated soils help to increase the carbon sink from the atmosphere and are also proposed for inclusion.[RUS]

Proposal 2: Establishment of a list of agreed additional activities

193. *The COP decided to establish, prior to the fixing of quantified objectives for the second commitment period, a list of agreed additional activities for use in the second and subsequent commitment periods together with the rules, modalities and guidelines for their accounting.*(FRA)

Proposal 3a: Narrow approach with land-based accounting

194. A narrow approach to the inclusion of additional activities in conjunction with the land-based accounting approach is proposed.(AUS)

Proposal 3b: Inclusion of re-vegetation

195. It is proposed that revegetation be included as an activity under Article 3.4. This should be defined as direct human activity to increase carbon stocks in above- and below-ground biomass and in soils on sites with minimal vegetative cover and low organic matter content. This can be accomplished through a variety of means, including the seeding or planting of trees, shrubs, legumes, and grasses. Revegetation efforts commonly involves input of nutrients through the application of organic or inorganic fertilizers.(ISL)

196. The choice of the most appropriate definition of revegetation under Article 3.4. is directly linked to the definition of afforestation under Article 3.3. These two activities are very similar and complementary. The main difference is that trees are not necessarily used in revegetation, at least not during the initial stages.(ISL)

Proposal 4: Inclusion of all sustainable forest management activities and management of wood and wood-based products

197. It is proposed that if Parties would agree to use a SFM approach as a basis for further work, there will be no need to elaborate and to agree upon a detailed list of additional human-induced activities in forestry.(POL)

198. Issues related to management of wood and wood-based products should also be considered as additional human-induced activity, taking into account their potential to promote development of the wood-based products market in the meaning of a long-term sequestration of carbon.(POL)

Table 4: Summary of proposed activities under Article 3.4*

Australia	Revegetation in 1st commitment period, a narrow approach with land-based accounting for 2nd commitment period.
Bolivia	All human-induced activities other than ARD, including forest degradation.
Canada	Forest management, cropland management, grazing land and livestock management and shelterbelts (agricultural land management).
EU	No activities in 1st commitment period, unless scale, uncertainty and risk related issues are resolved. Determine list of agreed activities before fixing quantified objectives for the 2nd commitment period.
Iceland	Revegetation.
Indonesia	Human-induced activities aimed at reducing greenhouse gas emissions and enhancing sinks, including avoidance of deforestation, forest fire prevention, sustainable forest management, sustainable agroforestry, and the conservation of threatened protected areas.
Japan	Activities that lead to an increase in the amount of removals of GHGs, forest management and urban greening. Countries themselves should identify practices.
Norway	Revegetation of degraded non-forest lands.
Poland	Sustainable forest management, management of wood and wood-based products.
Russian Federation	All types of country activities that may result in absorption of GHGs or may prevent their substantial emissions to the atmosphere. In the forest sector this should include: control of forest fires and insect outbreaks, artificial promotion of natural regeneration, artificial reconstruction of forest stands, and forest management activities. In addition, activities to conserve and improve the fertility of cultivated soils are proposed.
United States	Forest management, cropland management, grazing land management.

* This table includes all proposals, irrespective of whether a Party has proposed the activity for the first, second and/or subsequent commitment periods.

B. Accounting for Article 3.4 activities

1. Eligibility of activities for inclusion

Proposal 1a: Activities must be human-induced, measurements transparent and verifiable

199. *Changes in greenhouse gas emissions from agreed specific additional activities in the agricultural soils, land-use change and forestry categories may be added to or subtracted from a Party's assigned amount if that Party can demonstrate in its reporting under Article 3.4 that the specific activity is human-induced,[24] can be measured in a transparent fashion, is verifiable, is in line with that Party's sustainable management objectives and, for the first commitment period, has occurred since 1990.* (AUS)

[24] To be human-induced, an additional activity must result from a process that includes a deliberate human action or intervention. (AUS)

Proposal 1b: No activities unless scale, uncertainty and risk issues resolved

200. *No additional activities shall be used under the provisions of Article 3.4 during the first commitment period, except if the COP decides that the issues of scale, uncertainty and risk related to the sinks are resolved.*[25] (FRA)

Proposal 1c: Criteria should be the same as those for Article 3.3

201. Additional land-use activities should not be subject to a higher standard of measurability, measurement certainty and verifiability than sources already included in the Protocol. Appropriate rules can be devised to account comprehensively and equitably for uncertainties in sinks and sources for the purposes of determining compliance. The use of uncertainty as a screening criterion for the inclusion of Article 3.4 activities would create a double standard relative to the activities included under Article 3.3. (CAN)

Proposal 2: Consistency with SFM provisions in other multilateral environmental agreements

202. It is proposed to use provisions contained in sustainable forest management existing under the Pan-European Process on Forests, Montreal Process or Tarapoto Process, as a basis for further consideration. (POL)

2. Relation of activities to objectives and principles of the Convention and the Kyoto Protocol

Proposal 1a: Consistency with multi-lateral environmental agreements

203. *Implementation of the activities included under the provisions of Article 3.4 shall be consistent with the Convention on Biological Diversity, the Rio Forest Principles, and Agenda 21, and take into account the ongoing intergovernmental forest policy dialogue.* (FRA)

204. *Parties shall report to the relevant international organizations on how implementation of the activities included under the provisions of Article 3.4 are consistent with the Convention on Biological Diversity, the Rio Forest Principles, and Agenda 21 and are taking into account the ongoing intergovernmental forest policy dialogue.* (FRA)

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[25] *The Council reaffirms its willingness to continue to work with other Parties to clarify the treatment of sinks in the Kyoto Protocol. The Council notes that the IPCC Special Report on Land-Use, Land-Use Change and Forestry provides information relevant to decision-making. Furthermore, country specific data and information need to be available so that Parties can make well-informed decisions on Article 3.3, 3.4 and 3.7 of the Kyoto Protocol. The Council reaffirms that the inclusion of sinks activities should not undermine incentives for emissions reductions nor the conservation of biological diversity. The Council has serious concerns about the scale and the scientific and other uncertainties and risks associated with sinks. The Council therefore takes the position that a decision on the inclusion of defined and limited activities associated with further sources and sinks (Article 3.4) shall not apply in the first commitment period, except if these concerns are met. Criteria will be needed to develop modalities, rules and guidelines for the application of Article 3.4 of the Kyoto Protocol before quantified objectives are fixed for the second commitment period (...) The Council also emphasizes that any decision on definitions, methodologies and accounting rules should be consistent with sustainable forest management, including the conservation of biological diversity* (Community Strategy on Climate Change – Council Conclusions, Brussels, 23 June 2000 (9707/00)). (FRA)

Proposal 1b: Alignment with sustainable development objectives

205. For inclusion under Article 3.4, additional activities will need to be in line with sustainable development objectives.[AUS]

Proposal 2a: Inclusion of land management practices strengthens links with other Conventions

206. Including land management practices under Article 3.4 will promote positive environmental impacts; sustainable food production; a healthier environment; more effective agricultural adaptation to climate change and a strong and positive link between the goals of the UNFCCC and other conventions on desertification, biodiversity and wetlands (Ramsar).[CAN]

Proposal 2b: Revegetation adds value to land and brings ancillary benefits

207. Revegetation does not lead to commercial forestry but can increase the value of the land for grazing or recreation. Revegetation has significant ancillary benefits in terms of erosion control, favourable impact on the hydrological characteristics of the site and increases in biodiversity. Revegetation of degraded land is important in the context of the Convention to Combat Desertification. It will further help to achieve the objective of the UNFCCC, as stated in Article 2.[ISE]

Proposal 3: Broad approach most consistent with the Convention and the Kyoto Protocol

208. A broad and comprehensive approach is most consistent with the objective and principles of the UNFCCC. The following references in the Kyoto Protocol support the expanded role of LULUCF:

(a) "Protection and enhancement of sinks and reservoirs";

(b) "Promotion of sustainable agriculture in light of climate change considerations";

(c) "Modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amounts for Parties included in Annex I...".[USA]

3. Start date for accounting of additional activities

Proposal 1: Carbon stock changes between beginning and end of commitment period

209. *Verifiable changes in carbon stocks that Parties include in their accounting shall be measured as the change in carbon stocks between the beginning and end of a commitment period. The carbon dioxide equivalent emissions and removals of the other greenhouse gases included in Annex A to the Protocol shall be measured between the beginning and end of a commitment period.*[CAN]

Proposal 2: Accounting initiates with the activity

210. *Accounting of carbon stock changes and changes in emissions and/or removals of greenhouse gases related to the agreed additional activity during each commitment period shall begin with the onset of the activity. Such accounting for any agreed activities which began prior to the first commitment period shall be from 1 January 2008.*(FRA)

4. Carbon pools

Proposal 1a: All carbon sources included, sinks may be excluded

211. *Parties shall account for all carbon pools that are sources as a result of forest management and agricultural land management, but may choose not to account for a given pool in a commitment period if they provide transparent and verifiable information demonstrating that it is not a source.*(CAN)

Proposal 1b: All carbon pools included

212. All carbon stocks related to the Article 3.4 activities should be taken into account, including carbon in soils.(NOR)

Proposal 2: Exclusion of soil and residual organic matter

213. Changes in the amount of carbon in soils and residual organic matter should not figure into the accounting.(JPN)

Proposal 3: Inclusion of wood products

214. Management of wood and wood-based products should also be considered as additional human-induced activities taking into account their potential to promote development of the wood-based products market in the meaning of a long-term sequestration of carbon.(POL)

5. Non-CO_2 gases

Proposal 1a: Inclusion of all greenhouse gases other than CO_2, non-sources not accounted for

215. *The carbon dioxide equivalent emissions and removals of the other greenhouse gases included in Annex A to the Protocol and directly resulting from land subject to forest management and agricultural management shall also be measured and included in the accounting for the first and all subsequent commitment periods.*(CAN)

216. *Parties shall account for all emissions of greenhouse gases included in Annex A other than carbon dioxide as a result of forest management, but may choose not to account for a potential source in a commitment period if they provide transparent and verifiable information demonstrating that it is not a source.*(CAN)

Proposal 1b: Non-CO_2 GHGs accounted for in 2nd commitment period, decreasing sources not accounted for in 1st commitment period

217. *Both increases and decreases in carbon stocks and emissions of greenhouse gases other than CO_2 associated with any agreed activities shall be reported and accounted for under the provisions of Article 3.4. During the first commitment period emissions of greenhouse gases other than CO_2 need not to be accounted for so long as they are shown to be decreasing according to methodologies to be agreed by the COP.*(FRA)

Proposal 2a: Non-CO_2 GHGs included consistently with agreed methodologies

218. *Applicable non-CO_2 greenhouse gas emissions associated with land under Article 3.4*[26] *shall be included in a Party's inventories in a manner consistent with COP/MOP decisions on agreed methodologies, including good practice.*(USA)

Proposal 2b: Non-CO_2 gases in agricultural production

219. Non-CO_2 gases in agricultural production need to be reported along with the carbon sequestration.(CAN)

Proposal 3: Non-CO_2 GHGs included under special cases, agricultural soils under Article3.1

220. For forest management, emissions and removals of GHGs other than CO_2 should be included in the accounting, although they will only be adopted to the special cases such as nitrogen fertilization and planting on wetland.(JPN)

221. It is appropriate to treat GHG emissions from agricultural soil under Article 3.1 on the basis of provisions under the Kyoto Protocol.(JPN) Activities, however, that lead to increased removals of GHGs should be treated under Article 3.4.(JPN)

Proposal 4: Possibility of double counting of non-CO_2 GHG emissions from some activities

222. Methane and nitrous oxide emissions from a range of land-use activities such as rice cultivation, agricultural soils, prescribed burning of savannas and field burning of agricultural residues are included in Annex A to the Kyoto Protocol and will therefore be captured in Parties' national inventories under Articles 5 and 7. There is potential for double counting to occur if these emissions are also accounted for as a result of lands brought into the Article 3.4 accounting system.(AUS)

C. Rules, modalities and guidelines

1. Accounting framework

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[26] "Land under Article 3.4" means land on which an activity under paragraph 176 has taken place since 1990. (USA)

Proposal 1: Narrow approach to inclusion of additional activities and land-based accounting

223. A narrow approach to the inclusion of additional activities in conjunction with the land-based accounting approach is proposed.(AUS)

224. Under the land-based accounting approach, an area of land would be drawn into the Article 3.4 accounting system by the application of an eligible additional activity.(AUS)

225. A Party would then be required to account for all changes in greenhouse gas emissions on the area of land irrespective of whether changes in emissions result from a natural process (such as fire or pest invasion) or human activity.(AUS)

Proposal 2a: Broad-based approach

226. Full carbon stock accounting is a better scientific and logical approach for the second and subsequent commitment periods, given that sufficient and verifiable estimation methodology has been developed. An inclusion of full carbon stock accounting for the second and subsequent commitment periods would probably necessitate more differentiated commitments for the Parties.(NOR)

227. It is important to choose a baseline or threshold approach that ensures an accounting framework which is transparent, comparable, consistent, well documented and verifiable.(NOR)

Proposal 2b: Broad land-based approach

228. It is proposed to (a) include broad activities under Article 3.4 and (b) use a land-based approach to account for GHG emissions and removals related to these broad activities.(USA)

Proposal 3: Broad approach and activity-based accounting

229. Forest management, urban greening etc. should be included in activities under Article 3.4. It is appropriate to adopt activity-based accounting for Article 3.4 in order to have consistency with the accounting framework under Article 3.3. Under the broad definition, different practices would be accounted for as one incorporated activity; hence, the problem of double accounting when multiple practices on one section of land exist would not arise.(JPN)

230. Each country should identify practices constituting each activity in accordance with the situation unique to each country, and then identify land where these practices are carried out. For identified land, net removals of CO_2 should be accounted for by estimating changes in the amount of removals by subtracting the carbon stock reference figures for 2008 from those for 2012.(JPN)

2. Accounting rules

Proposal 1a: Accounting for changes in carbon stocks and GHGs. Activities in the 1st commitment period

231. *Changes in carbon stocks and/or emissions as a result of human-induced and natural effects (including inter alia commercial forestry, fire, pest invasion, CO_2 and nitrogen*

fertilization) shall be accounted for on areas of land where agreed specific human-induced additional activities in the agricultural soils, land-use change and forestry categories have taken place, either in 1990 or in a year subsequent to 1990 but before the end of the commitment period.[AUS]

232. For Article 3.4, for the first commitment period, eligible activities are specific, human-induced activities in the agricultural soils, land-use change and forestry categories, that have taken place in 1990 or in a year subsequent to 1990 but before the end of the commitment period. (Definitions for additional activities shall be as provided in this submission). To be human-induced, an additional activity must result from a process that includes a deliberate human action or intervention.[AUS]

Proposal 1b: Inclusion of all agricultural and forest management under Article 3.4

233. *Accounting for changes in greenhouse gas emissions by sources and removals by sinks shall be based on the land area subject to forest management and agricultural land management at the end of each commitment period.*[CAN]

234. *Verifiable changes in carbon stocks that Parties include in their accounting shall be measured as the change in carbon stocks between the beginning and end of a commitment period. The carbon dioxide equivalent emissions and removals of the other greenhouse gases included in Annex A to the Protocol shall be measured between the beginning and end of a commitment period.*[CAN]

235. *Subject to paragraph 236 the net greenhouse gas emissions by sources and removals by sinks of carbon dioxide resulting from forest management and agricultural land management shall be measured as the verifiable changes in all carbon stocks in the first and all subsequent commitment periods on land subject to these activities. The carbon dioxide equivalent emissions and removals of the other greenhouse gases included in Annex A to the Protocol and directly resulting from land subject to forest management and agricultural management shall also be measured and included in the accounting for the first and all subsequent commitment periods.*[CAN]

236. *Parties shall account for all carbon pools that are sources as a result of forest management and agricultural land management, but may choose not to account for a given pool in a commitment period if they provide transparent and verifiable information demonstrating that it is not a source. Parties shall account for all emissions of greenhouse gases included in Annex A other than carbon dioxide as a result of forest management, but may choose not to account for a potential source in a commitment period if they provide transparent and verifiable information demonstrating that it is not a source.*[CAN]

237. All source and sink activities that involve the use of the managed forest, such as harvesting and reforestation (using our definition of the term) would be accounted for in the accounting for forest management under Article 3.4.[CAN]

Proposal 1c: Accounts for all carbon stocks, non-CO_2 GHGs accounted for in 2nd commitment period

238. *Both increases and decreases in carbon stocks and emissions of greenhouse gases other than CO_2 associated with any agreed activities shall be reported and accounted for under the provisions of Article 3.4. During the first commitment period emissions of greenhouse gases other than CO_2 need not to be accounted for so long as they are shown to be decreasing according to methodologies to be agreed by the COP.*(FRA)

239. *To clarify the meaning of the final sentence of Article 3.4 to be that a Party may choose to apply during the first commitment period either the whole set of any agreed activities if occurring, or to apply certain of them, or to apply none of them provided that these activities have taken place since 1 January 1990. A Party may account for additional activities leading to an increase in carbon stocks only if it also accounts for all activities which lead to a decrease in carbon stocks in accordance with methods to be agreed by the COP.*(FRA)

Proposal 1d: When and how Parties may/may not account for Article 3.4 activities in the 1st and 2nd commitment periods

240. Parties should account for emissions and removals from the conversion of land from a natural state to one of the managed land categories under Article 3.4 and from forest, crop, or grazing uses to urban purposes. Carbon that is not actually emitted should not appear as emissions in the accounting system.(USA)

241. It is proposed that Parties that do not have national systems pursuant to Article 5.1 to estimate, monitor, verify, and report data for additional activities under Article 3.4 during the first commitment period in accordance with agreed methodologies and requirements under Articles 5 and 7 should not be able to apply those activities in the first period. Those Parties should work towards developing adequate national systems so that, beginning with the second commitment period, all Annex I Parties can comply with the Article 5, 7, and 8 requirements related to all LULUCF activities included under Articles 3.3 and 3.4.(USA)

242. It is proposed that Parties should be allowed to choose not to apply the COP/MOP decision under Article 3.4 in the first commitment period. However, such Parties should assess and report on their emissions and removals from LULUCF activities in a comprehensive manner in order to prepare for the second and subsequent commitment periods.(USA)

243. If a Party chooses to apply one or more additional activities under Article 3.4, the Party should, at a minimum, account for pools that are likely to be decreasing in the first commitment period. To the extent that a pool is not changing or is likely only to increase, then in limited circumstances it may be desirable to give the Party the flexibility not to count it in the first commitment period, assuming that the Party has otherwise met data requirements to include additional broad activities under Article 3.4.(USA)

244. It is proposed that in its pre-commitment period report, each Party should be required to specify its forest definition parameters and the additional activities under Article 3.4 that it intends to apply in the first commitment period. Parties should not be able to choose activities and definitions based on carbon stock changes that have already occurred.(USA)

245. To address the issue of double-counting (non-CO_2 gas emissions), "agricultural soils" under Annex A of the Kyoto Protocol should be interpreted broadly to include emissions from all nitrogen applied to soils, rather than including only nitrogen applied to cropland soils.(USA)

Proposal 1e: Accounting of all emissions and relevant uptakes or removals against 1990 baseline

246. All human-induced activities other than ARD should be counted in Article 3.4. For accounting purposes, all direct human-induced activities which produce emissions should be reported, and their emissions of GHG gases should be quantified. Only the direct human-induced activities which produce significant removal of GHG should be reported. All activities should seek to differentiate natural fluxes from those which are directly human-induced. For climatic coherence, the reference to "human-induced" activities in Article 3.4 should be read as "direct human-induced".(BOL)

247. It is proposed that Annex B Parties be permitted to include Article 3.4 activities in the first commitment period only if they are able to make available comparable figures for net emissions in 1990 (emissions by sources minus removals by sinks) against net emissions in the first commitment period, with a high degree of certainty (90 per cent reliability or 10 per cent error range), and still maintain their level of committed reductions, in relation to net emissions figures. Otherwise, Annex B Parties will only be allowed to include Article 3.4 activities from the second commitment period onwards.(BOL)

Proposal 2: Changes in carbon stocks estimated between 2008 and 2012

248. It is proposed that changes in carbon stocks are estimated by subtracting the carbon stock reference figures for 2008 from those for 2012.(JPN)

Proposal 3: Use of baseline and symmetry in accounting

249. It is proposed that a <u>baseline or a threshold accounting approach</u> be applied to factor out the effects of natural variability, business-as-usual activities and activities undertaken prior to 1990.(NOR)

250. It is proposed that Article 3.4 be understood in such a way that the selection of additional activities should cover both activities leading to net emissions and activities leading to net removals of greenhouse gases.(NOR)

3. <u>Proposals to limit credits from Article 3.4 activities</u>

Proposal 1a: Limits on credits from Article 3.4 activities

251. *A combination of the following approaches shall be used for the accounting rules for activities under Article 3.4:*(FRA)

252. *<u>Approach A</u>*:

(a) *Only <u>additional</u> agreed activities which can be shown to have a detectable intentional human-induced effect on carbon stocks shall be accounted for under the provisions of Article 3.4. This requirement shall be tested using verifiable statistical data to show that the*

hypothesis,[27] *that the activity has no detectable intentional human-induced effect, can be rejected with 10 per cent significance;*

(b) *Accepted statistical tests and deterministic modelling techniques shall be used singly or in combination to test the statistical hypothesis referred to in the previous paragraph and to separate the intentional human-induced effects from other effects. Such tests and techniques shall be based on data and information from:*

(i) *Control plots used for comparison between land subject to the activity and those not subject to it;*

(ii) *Data from research plots;*

(iii) *Existing forest survey and planting data;*

(c) *Deterministic model projections shall be used to factor out the dynamic effects of age structure in forest ecosystems and data from control and research plots shall be used to exclude carbon stock changes in all ecosystems caused by climate change, elevated carbon dioxide concentration and the effects of fertilization due to nitrogen fallout.*

(d) *Where such models, tests and techniques are not used, changes in carbon stocks associated with agreed activities shall only be counted in excess of a threshold level of 0.5 tC/ha-yr;*

(e) *Crediting of carbon stock increases due to human activities shall not exceed the net increase in carbon on lands affected by the actions.*[FRA]

253. *Approach B: Estimated carbon stock changes under Article 3.4 shall be adjusted for uncertainty in a conservative way.*[28, FRA]

254. *Approach C: Changes in carbon stocks associated with agreed activities shall only be counted in excess of a threshold level of X tC/ha-yr.*[FRA]

255. *Approach D: Only 5per cent of the verifiable changes in carbon stocks associated with agreed activities shall be accountable under the provisions of Article 3.4 during the first commitment period.*[FRA]

256. *Approach E: Verifiable increases in carbon stocks associated with any agreed activities shall only be accountable under the provisions of Article 3.4 up to 1 per cent of the assigned amount during the first commitment period.*[FRA]

Proposal 1b: Limits on credits for Article 3.4 activities during the 1st commitment period

257. *If a Party meets the accounting requirements set forth in chapter III, paragraph 283, it may elect to apply one or more of the additional activities specified in paragraph 176 in this chapter, to its assigned amount in the first commitment period, provided that these activities*

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[27] This would be referred to as the *null hypothesis* in statistical usage.[FRA]

[28] This means, for example, that carbon stock changes shall be debited or credited at the lower bound of the absolute value of the 95 per cent confidence interval.[FRA]

have taken place since 1990. The Party shall specify the additional activities it elects to apply in its pre-commitment period report submitted under Article 7.4. This election is irrevocable for the first commitment period. (USA)

258. *[Discount option: A Party electing to apply [one or more additional activities] [specific activity Y] under paragraph 176 for its first commitment period may add to its assigned amount for that commitment period only [X] percent of any positive net removals related to [those activities] [activity Y] .*

or

Threshold option: A Party electing to apply [one or more additional activities] [specific activity Y] under paragraph 176 for its first commitment period may add to its assigned amount for that commitment period only the positive net removals in excess of the threshold [specified for that Party in Annex Z] [formula based on country-specific data and information].] (USA)

259. A phase-in approach to the first commitment period, under which the positive net LULUCF removals of Annex I Parties would be reduced for purposes of first commitment period accounting only, is proposed. (USA)

260. Such a phase-in approach must:

(a) Be simple and transparent;

(b) Preserve incentives to reduce emissions, increase removals, and protect carbon reservoirs;

(c) Take full GHG accounting as its point of departure;

(d) Encourage the development of appropriate measurement, monitoring, and verification systems by Annex I Parties. (USA)

Proposal 1c: Clearly limited credits for 1st commitment period

261. It is proposed that Parties should anticipate a clearly limited credit from additional activities under Article 3.4 for the first commitment period. (NOR)

4. Continuity

Proposal 1a: Contiguous commitment periods

262. *Changes in greenhouse gas emissions and carbon stocks on areas of land where eligible additional activities have taken place on or since 1990 must be accounted for over contiguous commitment periods.* (AUS)

Proposal 1b: Contiguous commitment periods

263. Commitment periods should be contiguous, in order to avoid perverse incentives for the release of GHG from 3.4 activities and its subsequent absorption, thus claiming credits. (BOL)

5. Proposals for further work

Proposal 1: Accounting for carbon stocks, non-CO_2 GHGs, and double counting

264. *For some additional activities in the agricultural soils, land-use change and forestry categories under Article 3.4, accounting methodologies will need to be elaborated. This elaboration of methodologies shall ensure that changes in greenhouse gas emissions for non-carbon dioxide gases (methane and nitrous oxide) are accounted for.*[AUS]

265. *Methodologies shall also be elaborated to ensure that changes in greenhouse gas emissions from additional activities in the agricultural soils, land-use change and forestry categories are not also credited or debited in accounting for Parties assigned amounts under Article 3.1.*[AUS]

266. The IPCC should be invited to develop an accounting methodology as part of its methodological work on LULUCF to ensure that emission reductions associated with Article 3.4 activities are not also credited in the accounting of Parties' assigned amounts under Article 3.1.[AUS]

IV. METHODOLOGIES FOR MEASURING AND REPORTING IN RELATION TO ARTICLE 3.3 AND 3.4 ACTIVITIES

A. Proposals regarding Articles 5, 7 and 8

Proposal 1: Methodologies for measuring and reporting consistent with Articles 5, 7 and 8

267. *Methodologies for measuring and reporting on changes in emissions and/or carbon stocks for eligible LULUCF activities under Article 3.3 and 3.4 shall be in line with the requirements of Articles 5, 7 and 8 of the Kyoto Protocol.*[AUS]

Proposal 2: ARD lands identifiable via national inventory system

268. *The requirement for verifiability requires, inter alia, that areas of land subject to afforestation, reforestation and deforestation activities under the provisions of Article 3.3 be identifiable via the national inventory system.*[FRA]

Proposal 3a: Possible verification by third parties

269. When reporting, in order to ensure transparency, it is necessary to clarify measuring and estimation methods used so as to make possible verification by third parties.[JPN]

Proposal 3b: Possible verification by third parties, and penalization of inaccuracies

270. Measuring and reporting should be transparent and open to verification by third parties, including UNFCCC organisms.[BOL]

271. The reporting system should penalize evident inaccuracies, by the means of the compliance system. The accounting system, together with the reporting methodologies for

Annex B Parties, will have to be linked to the compliance system, developing the appropriate procedures to penalize inaccuracies in reporting, as well as subsequent losses in previous reported removals by sources, increasing the assigned amount units by a level equal to this inaccuracy/loss, on the next commitment period.(BOL)

Proposal 4: Submission of information on accounting approach and review under Article 8

272. Each Party should be required to submit information on its accounting approach as per Article 7 of the Protocol, and the approach would be subject to review as per Article 8 to ensure that it conformed to the agreed general accounting rules and conformed to the accounting principles.(CAN)

273. The extent to which a Party meets agreed requirements related to measuring, monitoring and reporting during the first and subsequent commitment periods will be determined as part of the compliance evaluation process.(CAN)

Proposal 5: Reporting consistent with existing international reporting commitments

274. It is proposed that requirements for the reporting of Article 3.3 activities should be consistent with existing international commitments and obligations to report against a broad range of forest statistics, including systems developed to support the principles of sustainable forest management.(NZL)

Proposal 6: Review of Article 3.3 and 3.4 under Articles 7 and 8; specification of definition and activities prior to the 1st commitment period

275. LULUCF accounts under Articles 3.3 and 3.4 should be reviewed and verified in the same manner as GHG inventories under Articles 7 and 8.(USA)

276. In its pre-commitment period report, each Party should be required to specify its forest definition parameters and the additional activities under Article 3.4 that it intends to apply in the first commitment period.(USA)

B. Proposals regarding use and further development of good practice and inventory guidelines

Proposal 1a: Utilize IPCC methodology, and extend good practice guidance

277. *Elaboration of methodologies for the implementation of Articles 3.3 and 3.4 shall take into account the methodological work of the IPCC,*[29] *and should extend good practice guidance to land-use, land-use change and forestry activities including methodologies to ensure that measurement uncertainty is taken into account.*(AUS)

278. The IPCC work on good practice guidance should be extended to cover LULUCF activities under the Protocol, including dealing with uncertainties. This would require development of a set of procedures that would allow Parties to address:

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[29] As requested by the Subsidiary Body for Scientific and Technological Advice at its tenth session.(AUS)

(a) The choice of estimation methods appropriate to countries' national circumstances;

(b) Quality assurance and quality control at a national level;

(c) Quantification of uncertainties;

(d) Requirements for data archiving and reporting to promote transparency and facilitate verification.[AUS]

Proposal 1b: Consistent with inventory guidelines and Article 7.1, develop good practice guidance, uncertainty management, and transparency

279. *Verifiable carbon stock changes and greenhouse gas emissions shall be measured, estimated, monitored and reported with associated uncertainties in a manner consistent with the inventory guidelines adopted by the COP,*[30] *any good practices adopted by the COP, and the requirements for supplementary information agreed by the COP/MOP under the provisions of Article 7.1 of the Kyoto Protocol, and these guidelines and good practices shall also take account of the need to ensure transparency.*[FRA]

280. *The IPCC should be asked to develop its work on good practices and uncertainty management to cover the requirements of verification, measurement, estimation, assessment of uncertainties, and monitoring and reporting carbon stock changes and emissions of other greenhouse gases associated with Article 3.3 and 3.4 activities, taking account of accounting issues associated with reversibility.*[FRA]

281. *The COP should take a decision at a future session on how the accounting system for Article 3.3 and 3.4 will use the good practice guidance provided by the IPCC.*[FRA]

Proposal 1c: Elaborate good practice guidance

282. *The SBSTA should invite the IPCC to elaborate good practice guidance for estimating changes in carbon stocks and emissions and removals of greenhouse gases, based inter alia on the framework provided by the IPCC Guidelines. Such good practice guidance could include the elaboration of 'Tier 2' methods, which currently do not exist for LULUCF, for application to Article 3.3.*[NZL]

Proposal 1d: Use IPCC guidelines, prepare guidance on good practice and uncertainty management

283. *Parties shall develop, maintain and use data and measurement systems related to land-use, land-use change and forestry categories in accordance with methods included in the 1996 Revised IPCC Guidelines, as elaborated through good practice guidance approved by the COP/MOP.*[USA]

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[30] Currently the Revised 1996 IPCC Guidelines, possibly to be revised.

284. *Applicable non-CO_2 greenhouse gas emissions associated with land under Article 3.4*[31] *shall be included in a Party's inventories in a manner consistent with COP/MOP decisions on agreed methodologies, including good practice.*(USA)

285. The IPCC should be requested to prepare a report on good practice in preparation of inventories related to LULUCF. The report should consider the applicability of the IPCC Revised 1996 Guidelines for GHG emission inventories in light of the decisions under Article 3.3 and 3.4. Once approved by the COP/MOP, the IPCC guidance should be incorporated into the methodological and reporting requirements under Articles 5 and 7 of the Protocol.(USA)

286. A freestanding provision (i.e., not part of the recommended COP/MOP decision) along the following lines is proposed: that the IPCC develop good practice guidance on accounting for emissions and removals under Article 3.3 and Article 3.4, to be applied in accordance with future decisions of the COP/MOP.(USA)

287. Uncertainty in estimates of emissions and removals associated with activities under Articles 3.3 and 3.4 should be treated in the same manner as in the 1996 Revised IPCC Guidelines, as elaborated by good practice. As part of its work to prepare good practice for LULUCF inventories, the IPCC should be requested to consider the applicability of this approach to uncertainty in the LULUCF sector.(USA)

Proposal 1e: Develop good practice guidance

288. It is proposed that good practice guidance for LULUCF measuring, monitoring and reporting should be developed to address measurement uncertainties.(CAN)

Proposal 2: Development of measurement and reporting guidelines by relevant bodies of the COP

289. New measurement and reporting guidelines for the implementation Article 3.3 and 3.4 will have to be developed by the relevant bodies of the COP, with the technical assistance of the IPCC. The aim is to advance to a balance of the changes in stocks of carbon that reflects the real fluxes of carbon between the terrestrial ecosystems and the biosphere, aimed at a system that counts all the changes in above-ground and below-ground biomass, as well as the carbon contents in soils to a depth of 1 metre, including delayed emissions from soils. For GHGs other than carbon, only fluxes will have to be counted.(BOL)

Proposal 3: IPCC default values requested

290. It is proposed that IPCC default values should be provided for use by Parties that are unable to directly measure, statistically estimate, or model their changes in carbon stocks and emissions of other greenhouse gases, as is done in other parts of the IPCC Guidelines.(USA)

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[31] "Land under Article 3.4" means land on which an activity under paragraph 3 (a) below has taken place since 1990.(USA)

V. OVERALL ACCOUNTING APPROACHES IN RELATION TO THE REQUIREMENTS OF ARTICLE 3.3, 3.4 AND 3.7, REVERSIBILITY, NATURAL EFFECTS AND ACCOUNTING INTERLINKAGES

A. Eligibility of activities for inclusion

Proposal 1a: Sink credits contingent on national policies, and the requirements of multilateral environmental agreements

291. *Parties' accounting of sinks credits under Article 3 shall be contingent on the requirements that:*

(a) *National policies on the management, conservation and sustainable development of all types of forests be in place and are consistent with the Forest Principles as agreed on at the 1992 Rio Conference and are consistent with the recommendations of the Intergovernmental Panel on Forests and the Intergovernmental Forum on Forests;*[32]

(b) *National policies provide criteria and indicators for the sustainable development and management of forests as well as of other ecosystems in accordance with the Convention on Biological Diversity.* (FRA)

Proposal 1b: Implementation of Article 3.3 and 3.4 consistent with broader environmental goals

292. *Parties should take into account, as appropriate, ancillary environmental effects in developing their domestic approaches related to implementation of Article 3.3 and Article 3.4, including effects on biodiversity, soil, air and water quality, the capacity of ecosystems to adapt to climate change, risks of degradation, long-term vulnerability to disturbance by fire, pests and invasive species, and the protection of primary and maturing secondary native forests.* (USA)

Proposal 1c: Carbon sequestration activities must be consistent with multilateral environmental agreements

293. It is very important that the rules do not give credits or other rewards for practices that damage forests and other ecosystems, terrestrial or marine. In this respect, it is of the utmost importance to coordinate and mutually support actions with the Convention on Biological Diversity. Activities directed towards the protection and management of GHG sinks should as well be consistent with the major objectives of Agenda 21 and the multilateral environmental agreements. In view of the coherence with United Nations principles on environmental conservation and sustainable development, these principles should be applied to carbon sequestration and sink protection activities. (BOL)

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[32] Bearing in mind that national policies and accompanying criteria and indicators will be revised in line with developments of international policies. (FRA)

Proposal 1d: Consistency with multilateral environmental agreements, promotion of terrestrial sinks and permanence

294. In fulfilling the commitments under the Kyoto Protocol such activities should be promoted on the condition that the sequestration is permanent and not in conflict with other international environmental agreements, such as the Convention on Biological Diversity.(NOR)

295. It is important that definitions, modalities and rules etc. related to Article 3.3 and 3.4 should give credit to promotion of sustainable forest management practices, included maintenance of forest biodiversity, when such activities lead to sink enhancements. Furthermore, it is crucial that none of the activities to be included under Article 3.3 and 3.4 should be in disagreement with any of the articles of the Convention or the Kyoto Protocol. They should also be in conformity with the Convention on Biological Diversity, the United Nations Forum on Forests, and other relevant international agreements. The work on criteria and indicators for sustainable forest management by regional processes, for example the Pan-European Process (The Ministerial Conference on the Protection of Forests in Europe) should be taken into account. One should for instance aim for a definition of "human-induced" that prevents Parties from obtaining credits for converting natural forest to plantations, defining this as reforestation under Article 3.3. Furthermore, afforestation of non-forest land should not lead to reduced biodiversity or destroy valuable types of natural resources. Consideration would need to be given to synergies and tradeoffs related to many LULUCF activities under the UNFCCC and its Kyoto Protocol in the context of sustainable development including a broad range of environmental, social, and economic impacts.(NOR)

Proposal 2: Uncertainty should be a criterion for selection of projects

296. Uncertainty should be a criterion for selection of activities and inclusion of carbon pools.(NOR)

Proposal 3: Uncertainties, perverse incentives and loopholes must be considered

297. LULUCF rules and guidelines must take into account concerns expressed with respect to uncertainties, perverse incentives and loopholes. This calls for a well-balanced agreement at COP 6 that does embrace all major human-induced LULUCF activities under Article 3.3 and 3.4. Activities having the potential to affect the climate system fall under both articles and may have implications for each other in order to serve the ultimate goal of the Convention.(CHE)

B. Start of accounting period

Proposal 1a: Accounting for changes in GHG emissions; accounting starts with activity

298. *Parties are required to account for changes in greenhouse gas emissions that occur during the first commitment period on areas of land where eligible land-use, land-use change and forestry activities have taken place, commencing either in 1990 or in a year subsequent to 1990 but before the end of the commitment period.*(AUS)

299. Accounting for Article 3.3 and 3.4 lands will commence on those areas of land at the start of the activity.(AUS)

Proposal 1b: Accounting of changes in carbon stocks; accounting starts with activity, continues indefinitely

300. *For each commitment period, the changes in carbon stocks associated with land under Article 3.3 and 3.4 shall be measured from the time the activity first occurred since 1990 or the beginning of that commitment period, whichever is later, to the end of that commitment period.*(USA)

301. "Land under Article 3.3" means land that has been afforested, deforested, or reforested since 1990.(USA)

302. *"Land under Article 3.4" means land on which an activity under paragraph 176 has taken place since 1990.*(USA)

Proposal 2: 1990 baseline

303. Considering that 1990 is the base year for most of the Annex I Parties GHG emissions inventories by sources and removals by sinks, the land-use existing in 1990 should also be the basis to calculate the increase or decrease of the GHG emissions during the first commitment period, from 2008 to 2012.(CHL)

Proposal 3: Accounting of changes in carbon stocks by substraction over commitment period

304. In terms of reducing uncertainty and excluding arbitrary estimation, accounting should be done by subtracting the carbon stock reference figures for 2008 from those for 2012, without separating out natural effects.(JPN)

C. Carbon pools

Proposal 1a: All carbon pools included

305. *To measure carbon dioxide, carbon pools shall include above-ground biomass, litter and woody debris, below-ground biomass, soil carbon and harvested materials. The methodologies for accounting for harvested wood shall be those given in the 1996 Revised IPCC Guidelines as required by Article 5.2.*(AUS)

306. Relevant carbon pools would include above-ground biomass, litter and woody debris, below-ground biomass, soil carbon and harvested materials.(AUS)

307. Once an area of land becomes subject to the Article 3.3 and 3.4 accounting system, full carbon accounting of carbon pools and measurement of changes of non-CO_2 greenhouse gases (methane and nitrous oxide) on that land will be required.(AUS)

Proposal 1b: Accounting for all carbon pools, including soil carbon to appropriate depth

308. *Parties shall account for carbon pools associated with land under Article 3.3 and 3.4.*[33] *These carbon pools include, inter alia, live biomass including roots, litter mass, organic soil*

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[33] "Land under Article 3.3" means land that has been afforested, deforested, or reforested since 1990.(USA) "Land under Article 3.4" means land on which an activity under paragraph 3(a) below has taken place since 1990.(USA)

carbon to a depth appropriate to the vegetative cover, logging residue, standing or down dead wood, and products in landfills. Carbon in harvested biomass products should be included in accordance with rules to be established by the COP/MOP.[USA]

309. Carbon accounting should take into account the transient nature of much of the above-ground biomass on cropland and grazing lands. However, in the case of grazing lands and converted cropland, the durable above-ground woody carbon pool can be significant and may be one of the main components that changes with management.[USA]

Proposal 1c: Verifiable accounting of all carbon pools

310. The verifiable, complete accounting of carbon stock changes will be made in all carbon pools related to a given set of landscape units in a given time period.[CHL]

Proposal 1d: Verifiable accounting of all carbon pools

311. For the first commitment period, all relevant carbon pools should be considered under Article 3.3 and Article 3.4, as long as the stock change can be measured in a verifiable way. In this respect, both stem wood, branches, tops, stumps and roots, as well as slash and carbon in soil, should be considered. The IPCC Special Report underlines the importance of the soil as a carbon reservoir.[NOR]

Proposal 2a: Carbon stocks in wood products or agricultural products

312. *Carbon stocks in forest products or agricultural products derived from land subject to afforestation, reforestation and deforestation since 1990, or from forest management or agricultural land management shall be included in the accounting based on rules agreed at the first session of the Conference of the Parties serving as the meeting of the Parties to the Protocol.*[CAN]

Proposal 2b: Measure and verify soil carbon stocks

313. The measurement and verification of soil carbon stock changes is regarded as feasible for the first commitment period.[CAN]

Table 4: Summary of proposals for inclusion or exclusion of carbon pools[34]

	All pools		Above-ground biomass		Below-ground biomass		Litter		Dead wood		Soil		Products		Landfill	
Article	3.3	3.4	3.3	3.4	3.3	3.4	3.3	3.4	3.3	3.4	3.3	3.4	3.3	3.4	3.3	3.4
Australia	*		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Bolivia											Y	Y				
Canada	Y	Y										Y	Y	Y		
Chile	Y	Y														
Costa Rica			Y													
EU			Y		Y		Y				Y					
Japan												N				
Norway	Y	Y														
United States		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Y= Yes, carbon pool needs to be accounted for;
N= No, pool not to be accounted for;
* = Empty cells indicate that no statements have been made about this specific carbon pool.

D. Non-CO_2 gases

Proposal 1a: Accounting for non-CO_2 gases required

314. Once an area of land becomes subject to the Article 3.3 and 3.4 accounting system, full carbon accounting of carbon pools and measurement of changes of non-CO_2 greenhouse gases (methane and nitrous oxide) on that land will be required.[(AUS)]

Proposal 1b: Non-CO_2 GHGs included when measured verifiably

315. The impacts on all greenhouse gases, including non-CO_2 greenhouse gas emissions, should be included under Article 3.3 and 3.4, provided the net emissions can be measured in a verifiable way. The effects on CH_4 and N_2O should be accounted for as well, provided the net emissions can be measured in a verifiable way and within a given level of significance.[(NOR)]

Proposal 1c: Non-CO_2 GHGs included except where data limited

316. Where data to reliably quantify emissions and removals of non-CO_2 gases on the national scale are limited, and where there are also no methodologies for such estimates in the 1996 IPCC Guidelines, such emissions and removals should not be included in emissions inventories, at least in the first commitment period.[(USA)]

Proposal 1d: Activity-based accounting of non-CO_2 gases

[34] This information is derived from all sections on carbon pools in this document. If Parties spoke against carbon pools in general, this text is included in this section. If Parties only spoke against carbon pools under the sections on either Article 3.3 or 3.4, it will not have been repeated in this section. However, this summary table does reflect all proposals.

317. Non-CO_2 greenhouse gas reporting, if Parties decide to include it, will likely rely primarily on activity-based accounting.[CAN]

Proposal 1e: Non-CO_2 GHG emissions from agricultural soils included under Article 3.1

318. It is appropriate to treat GHG emissions from agricultural soils under Article 3.1 on the basis of provisions under the Kyoto Protocol. Activities, however, that lead to increased removals of GHGs should be treated under Article 3.4.[JPN]

E. Human-induced and natural effects

Proposal 1: Human-induced and natural changes in carbon stocks to be accounted for

319. *To be human-induced, an additional activity must result from a process that includes a deliberate human action or intervention.*[AUS]

320. *Changes in carbon stocks and greenhouse gas emissions as a result of human-induced and natural processes (including inter alia commercial forestry, fire, pest invasion, El Nino cycles, CO_2 and nitrogen fertilization) during the commitment period shall be accounted for on each area of land where an eligible activity has taken place.*[AUS]

321. *Parties are required to account for all changes in greenhouse gas emissions and/or carbon stocks, including those that result from natural effects, that occur during the commitment period on areas of land where eligible land-use, land-use change and forestry activities have taken place.*[AUS]

Proposal 2: Unequivocal and instant human action

322. The term "direct human-induced" applied to LULUCF activities should be read as every activity which is a product of an unequivocal and instant human action, which generates GHG emissions by sources and/or removals by sinks, that should be accounted for in the way stated in point 4 below.[35, BOL]

Proposal 3: Anthropogenic activities on land management

323. Human-induced changes in land-use are defined as anthropogenic activities on land within a given territory that modify its ability to emit greenhouse gases or may prevent their substantial emissions to the atmosphere.[RUS]

Proposal 4: Phase-in approach, separating natural and indirect effects not practicable

324. Measurable, verifiable changes in carbon stocks should be the focus of policy development regarding LULUCF under the Kyoto Protocol. Concerns about natural and indirect effects could potentially be considered in connection with discussions regarding a possible phase-in approach for the first commitment period, as well as when future emissions limitation commitments are developed.[USA]

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35 Point 4 refers to chapter 4 on page 4 of the Bolivian submission.[BOL]

325. Complex methods of simultaneously factoring out natural and indirect factors from other factors that affect carbon stocks would not be practicable for purposes of accounting under Article 3.3 and 3.4.[USA]

Proposal 5: Baseline to separate human-induced and natural, or stock changes 2008-2012

326. It is necessary to establish a counterfactual baseline in order to separate natural changes from human-induced changes, which may increase uncertainty, and the setting of a baseline may have to be decided arbitrarily. There is another way of setting up control areas not subject to human-induced activities, but in terms of expense and effect it is impractical to set up these areas taking into account species, landform, climate and so on. Also, in certain cases, it might take a long time until effects become evident. Therefore, in terms of reducing uncertainty and excluding arbitrary estimation, accounting should be done by subtracting the carbon stock reference figures for 2008 from those for 2012, without separating out natural effects.[JPN]

F. Accounting framework

Proposal 1a: Accounting for all emissions and/or carbon stocks for all land included under Article 3.3 and 3.4

327. *For eligible Article 3.3 and 3.4 activities in the first commitment period, since 1990 means on or since 1 January 1990 and the end of the commitment period means up to and including 31 December 2012.*[AUS]

328. *An area of land shall be subject to accounting for changes in emissions and/or carbon stocks if it is subject to an eligible activity under Article 3.3 or 3.4. Any changes in carbon stocks and/or greenhouse gas emissions resulting from subsequent eligible LULUCF activities introduced on that specific area of land during the commitment period shall be accounted for.*[AUS]

329. An overarching carbon accounting system will need to provide consistent and robust estimates for LULUCF activities. To the extent possible, given the different requirements of Article 3.3, 3.4 and 3.7 there should be measurement and accounting consistency across the carbon accounting system.[AUS]

330. The Protocol states that only certain human-induced LULUCF activities in Article 3.3 and 3.4 can be credited or debited against Parties' assigned amounts. This means that full carbon accounting of all terrestrial sinks within a Party's borders is not required for the purposes of implementing Article 3.[AUS]

331. This will require specification of activities that are eligible under Article 3.3 and 3.4; and identification (for the purposes of measurement and reporting) of land units on which these activities occur.[AUS]

Proposal 1b: Land-based approach to accounting under Article 3.3 and 3.4 but with activity-based exceptions

332. A land-based approach should be applied to accounting for Article 3.3 and 3.4 combined, but activity-based accounting may be used where the circumstances warrant it (for example, for some types of deforestation) and subject to the broad accounting rules agreed by Parties.[CAN]

333. The accounting approach for Article 3.3 would be part of an overall accounting framework for forests for Article 3.3 and 3.4 combined. Activities under Article 3.3 and 3.4 must be treated as a complete package, rather than a piecemeal set of activities defined and measured in isolation from one another. Under this approach all activity on the managed forest, and therefore all source and sink activities including harvesting and reforestation, would be included in the accounting.[CAN]

334. Approach to Article 3.3 and 3.4 can be based on eight principles:

(a) No decrease in agreed assigned amounts due to unbalanced accounting;

(b) Achieve a balanced and comprehensive approach to both sinks and sources;

(c) Recognize that measurement systems and levels of understanding related to LULUCF will improve with time;

(d) Support the objective and commitments of the UNFCCC;

(e) Accommodate national circumstances;

(f) Strive for consistency;

(g) Base decisions on sound science;

(h) Adopt flexible but credible accounting rules.[CAN]

Proposal 1c: Land-based carbon accounting

335. A dominantly land-based full carbon accounting system is technically the most feasible and scientifically promising accounting system for LULUCF activities in the long term.[CHE]

Proposal 1d: Land-based and comprehensive accounting, including products and landfills

336. The best long run approach to accounting for LULUCF activities under the Kyoto Protocol is full GHG accounting on all managed lands. Including broad activities together with a land-based accounting approach, would be the most rigorous and scientifically credible way to provide for comprehensive GHG accounting.[USA]

337. Activities under Article 3.3 and 3.4 should use land-based accounting, i.e. counting all of the changes in carbon stocks (natural or otherwise) associated with lands under Article 3.3 and 3.4. A land-based approach is well-suited to broadly-defined activities.[USA]

338. To the extent feasible, the accounting system should reflect the actual emissions and removals from relevant pools as they occur.[USA]

339. Accounting for lands under Article 3.3 should be consistent with accounting for lands under Article 3.4 in the second and subsequent periods. A single coherent system should account for activities under both Article 3.3 and Article 3.4.[USA]

Proposal 1e: Land-based accounting

340. The changes in carbon stocks resulting from natural or direct human-induced reforestation will be included in the national GHG inventories within a land-based accounting system, according to the IPCC Guidelines.(CHL)

Proposal 2a: Article 3.3 and 3.4 should be treated the same

341. Activities under Article 3.3 and 3.4 should be estimated in the same accounting framework to ensure consistency in accounting between Article 3.3 and 3.4.(JPN)

Proposal 2b: Article 3.3 and 3.4 should be treated the same

342. Articles 3.3 and 3.4 are closely interrelated and should be considered together.(RUS)

Proposal 3: Full carbon accounting in second and subsequent commitment periods

343. Seeking full carbon stock accounting for the first commitment period would not be our understanding of Article 3.3 and 3.4 under the Kyoto Protocol.(NOR)

344. For the second and subsequent commitment periods a full carbon stock accounting is a better scientific and logical approach, given that sufficient and verifiable estimation methodology has been developed. The inclusion of full carbon stock accounting would probably necessitate more differentiated commitments for the Parties.(NOR)

Proposal 4: Only substantial removals beyond "business as usual" should be reported

345. Only substantial removals by sinks (i.e. only those which are expected to grow very fast and/or become a large sink with time, under unequivocal direct human action) should be reported for the means of determining Annex B Parties' net emissions level, in compliance with their commitments under Article 3 of the Kyoto Protocol.(BOL)

346. It is indispensable to establish a system of carbon accounting which reflects the directly human-induced exchanges of GHG between the terrestrial biosphere and the atmosphere, with the greatest accuracy practicable, clearly establishing direct human-induced effects, crediting only real and measurable efforts in climate change mitigation, through LULUCF activities that go beyond "business as usual" activities in Annex I countries.(BOL)

347. All emissions by sources from Article 3.3 and 3.4 activities should be reported.(BOL)

1. Accounting rules

Proposal 1: Activity-based accounting

348. *An area of land shall be subject to accounting for changes in emissions and/or carbon stocks if it is subject to an eligible activity under Article 3.3 or 3.4. Any changes in carbon stocks and/or greenhouse gas emissions resulting from subsequent eligible LULUCF activities*

introduced on that specific area of land during the commitment period shall also be accounted for.[36] (AUS)

349. *In the event that an activity commences during the commitment period, the changes in carbon stocks are to be measured by reference to the carbon stocks at the start year.* (AUS)

Proposal 2: Accounting for activities under Article 3.4 has precedence over Article 3.3 accounting

350. *If an area of land has been subject to afforestation, reforestation or deforestation since 1990 under Article 3.3 and qualifies as land subject to forest management or agricultural land management under Article 3.4, it shall be accounted for under Article 3.4 and shall not be accounted for under the provisions for accounting related to Article 3.3.* (CAN)

Proposal 3: Monitoring required, and if monitoring ceases a debit is taken

351. *All changes in carbon stocks which, under the provisions of Article 3.3 and 3.4 of the Kyoto Protocol, have been added to Parties' assigned amounts shall be monitored so long as they remain so added, shall be subtracted from the assigned amount if the monitoring cease, and shall be subtracted from the assigned amount in proportion to their decrease should the monitoring indicate that they are declining.*[37] (FRA)

Proposal 4: Continuous accounting and avoidance of overlap between accounting for Article 3.3 and 3.4 lands

352. *Once land is accounted for under Article 3.3 and 3.4, Parties must continue to account for that land unless emissions associated with that land are insignificant.* (USA)

353. For the first commitment period, accounting procedures should be developed to address any overlap between lands under Article 3.3 and lands that could be subject to a phase-in approach under Article 3.4. (USA)

Proposal 5: No credit for removals due to natural variability

354. The guiding principle is to count all emissions, while counting only the relevant uptakes or removals at the national level. (BOL)

355. The accounting system should avoid, by all means and methods possible, that Annex B Parties are credited for removals by sinks due to the natural variability of their forests and other terrestrial ecosystems. These means and methods should be updated as often and practicable thereafter. (BOL)

Proposal 6: Carbon stock changes accounted for under both Article 3.3 and Article 3.4

356. Parties should account for emissions and removals of CO_2 by measuring or estimating changes of carbon stock for both Articles 3.3 and Article 3.4. (JPN)

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[36] Explanatory text on the accounting sub-rules for Article 3.3 activities can be found in section II of the Australian submission. (AUS)

[37] This deals with sink reversal.

2. Contiguous commitment periods and reversibility

Proposal 1a: Reversibility of sequestration must be accounted for, contiguous commitment periods guarantee this

357. *Changes in greenhouse gas emissions and carbon stocks on areas of land where human-induced afforestation, reforestation and deforestation since 1990 or additional activities agreed under Article 3.4 have taken place must be accounted for over contiguous commitment periods. This means Parties shall account for any reversibility of sequestration or emissions reductions from eligible LULUCF activities under Article 3.3 and 3.4 during commitment periods and over contiguous commitment periods.*[AUS]

358. *Changes in greenhouse gas emissions and/or carbon stocks on areas of land where direct human-induced afforestation, reforestation and deforestation and agreed human-induced specific additional activities in the agricultural soils, land-use change and forestry categories occurred since 1990 must be accounted for over contiguous commitment periods.*[AUS]

Proposal 1b: Continued accounting required

359. *Once land is accounted for under Article 3.3 and 3.4, Parties must continue to account for that land unless emissions associated with that land are insignificant.*[USA]

Proposal 1c: Permanence of sequestration addressed through contiguous commitment periods and rigorous accounting

360. The issue of permanency of sequestration can be dealt with through contiguous commitment periods and a rigorous accounting scheme that addresses changes in land management and their impact on sources and sinks.[CAN]

Proposal 1d: Continued accounting required

Once land enters the accounting for the Kyoto Protocol, it should remain in the accounting system in future commitment periods.[CAN]

Proposal 1e: Contiguous commitment periods should be set

361. In accounting, commitment periods should set contiguously and account for both emissions and removals.[JPN]

Proposal 1f: Reversibility of sequestration should be accounted for

362. Any accounted removals that are later reversed (resulting from any cause, natural or human) should be accounted for at the time those emissions occur. A broad and comprehensive approach, contiguous commitment periods, and an accounting system that continuously tracks land that comes under Article 3.3 and 3.4 will ensure that subsequent releases of carbon are accounted for. Land that comes into the system under Article 3.3 and 3.4 should remain in the overall LULUCF accounting system indefinitely, as long as there is a chance of significant changes in carbon stocks. That means that all applicable future emissions and removals would be counted in the commitment period in which they occur.[USA]

Proposal 2: Further rules needed if commitment periods are not contiguous

363. *Further accounting rules would be required if commitment periods are not contiguous.*[38] (FRA)

3. Leakage

Proposal 1: Broad and comprehensive accounting by all Annex I Parties required to prevent leakage

364. Activities to increase net carbon removals in one area or sector may stimulate emissions in another. As long as those emissions occur within Annex I Parties whose binding commitments require accounting for them, such leakage would not increase overall Annex I GHG emissions. The best long-term approach to prevent leakage is broad and comprehensive LULUCF accounting by all Annex I Parties.(USA)

4. Flexibility, verifiability, transparency

Proposal 1: Accounting should accommodate national circumstances and be adhered to by all Parties

365. An accounting framework should incorporate sufficient flexibility to accommodate national circumstances. The accounting system must also be designed to ensure transparent, verifiable, comparable, cost effective, accurate and consistent estimates in order to assure all Parties that the accounting is fair and in accordance with the rules agreed by Parties.(CAN)

G. Accounting interlinkages - Article 3.7

Proposal 1: Implementation of Article 3.3 and 3.7

366. *Parties with a net source of emissions from land-use change and forestry in 1990 shall include in the calculation of their 1990 baseline emissions from land-use change. Emissions from land-use change are defined only as net emissions from the forest and grassland conversion and abandonment of managed lands subcategories as laid out in the 1996 Revised IPCC Guidelines.*[39] (AUS)

367. Parties seeking to utilize Article 3.7 are therefore required to show that they had a net source of emissions from LUCF in 1990. Such Parties are then required to include emissions from relevant carbon pools associated with the forest and grassland conversion and abandonment of managed lands sub-categories in the calculation of their 1990 baseline.(AUS)

368. On this basis, emissions occurring in the remaining subsectors *Changes in Forests and Other Woody Biomass Stocks, CO_2 Emissions and Removals from Soils and Other* are not included under the term land-use change in the calculation of the 1990 baselines via Article 3.7. This approach establishes a direct linkage between the terms deforestation in Article 3.3 and land-use change in Article 3.7. This means there is no need to address potential double counting

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38 The EU is strongly in favour of contiguous commitment periods.(FRA)

39 IPCC Guidelines for National Greenhouse Gas Inventories, Greenhouse Gas Inventory Reference Manual Vol 3, Section 5.2.(AUS)

that may arise between Article 3.7 and additional activities in the agriculture soils and land-use change categories that may be agreed under Article 3.4.[AUS]

369. Article 3.7 cannot be used to include in the calculation of Parties' 1990 baselines greenhouse gas emissions from non-forest land-use change such as conversion of pasture to crop lands.[AUS]

Proposal 2: When using Article 3.7 , Article 3.3 and 3.4 do not apply

370. *The meaning of the final sentence of Article 3.7 of the Kyoto Protocol is that Parties for whom land-use change and forestry constituted a net source of greenhouse gas emissions in 1990 shall include their aggregate anthropogenic emissions minus removals from land-use change*[40] *in their greenhouse gas inventory for the base year and subsequent years.*[FRA]

371. *Since Parties for whom the final sentence of Article 3.7 applies will already have counted the effects of activities related to land-use change agreed under the provisions of Article 3.3 and Article 3.4 as part of their base year and subsequent inventories, further accounting of these activities under the provisions of Article 3.3 and 3.4 would not apply to these Parties.*[41] [FRA]

Proposal 3: IPCC emissions categories delineate "land-use change" through a single pre-commitment period review

372. Emissions categories from the Revised IPCC Guidelines should be used to delineate which emissions are from land-use change and which are associated with land-use and forestry activities. If national methods are used, it must be clear which emissions and removals are associated with land-use change categories in the IPCC Guidelines.[USA]

373. A single pre-commitment period review process should apply to LULUCF-related emissions and removals and other elements of a Party's inventory. Under this process, the base year inventory would be submitted, reviewed, and, if it does not meet reporting requirements, conservatively adjusted.[USA]

374. Consistent with a broad and comprehensive approach and Article 5.1, the base year GHG inventory should cover all emissions and removals in the LULUCF sector. Determination of whether a Party qualifies as a net emitter under Article 3.7 should be based on a complete, reviewed inventory.[USA]

375. The language in Article 3.7 indicates that CO_2-equivalent emissions should be used, implying that all GHG emissions, in CO_2-equivalents, associated with land-use change should be used in calculating the initial assigned amount.[USA]

376. Once the initial assigned amounts for Parties are definitively established, those levels, denominated in MMT CO_2-equivalent, will be fixed numerical values that are independent of the inventories from which they were derived.[USA]

H. Further work

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[40] Recognizing that afforestation, reforestation and deforestation are all examples of land-use change.[FRA]

[41] This deals with avoiding double counting between the second sentence of Article 3.7 and Article 3.3 and 3.4.[FRA]

Proposal 1a: Accounting rules, and methods for accounting for wood products and for natural and indirect effects

377. *Accounting approaches used by Parties for accounting under Article 3.3 and 3.4 shall conform to additional rules for the accounting as agreed at the first session of the Conference of the Parties serving as the meeting of the Parties to the Protocol.*(CAN)

378. In relation to work between COP 6 and COP 7, it is proposed that Parties consider the following issues, taking into account the conclusions of SBSTA 13 and 14, and decisions at COP 6; methodological issues related to the IPCC inventory guidelines, woods products accounting rules, other accounting rules.(CAN)

379. It would be appropriate for SBSTA to request that the IPCC study methods for accounting for natural and indirect effects in more detail.(CAN)

Proposal 1b: Accounting rules if Article 3.3 and 3.4 activities applied to same land

380. *To consider further the accounting rules that shall be used if Article 3.3 and 3.4 activities were to be applied to the same piece of land.*(FRA)

Proposal 1c: Measurement and reporting guidelines required

381. New measurement and reporting guidelines for the implementation of Article 3.3 and 3.4 will have to be developed by the relevant bodies of the COP, with the technical assistance of the IPCC. The aim is to advance to a balance of the changes in stocks of carbon that reflects the real fluxes of carbon between the terrestrial ecosystems and the biosphere, aimed at a system that counts all the changes in above-ground and below-ground biomass, as well as the carbon contents in soils to a depth of 1 metre, including delayed emissions from soils. For the GHG other than carbon, only fluxes will have to be counted.(BOL)

Proposal 2: Rules for including forest products

382. *Carbon in harvested biomass products should be included in accordance with rules to be established by the COP/MOP.*(USA)

Proposal 3: Development of good practices guidance required, including for overlap between Article 3.3 and 3.4 lands

383. *The decision by the COP should also contain a freestanding provision (i.e. not part of the recommended COP/MOP decision) along the following lines: Requests that the IPCC develop good practice guidance on accounting for emissions and removals under Article 3.3 and Article 3.4 to be applied in accordance with future decisions of the COP/MOP.*(USA)

384. For the first commitment period, accounting procedures should be developed to address any overlap between lands under Article 3.3 and lands that could be subject to a phase-in approach under Article 3.4.(USA)

385. An issue arises as to how to account for carbon emitted from harvested wood products, especially those that are traded internationally. The United States supports the process for further decisions on this issue.(USA)

Proposal 4: Approach for estimating wood products needed

386. Inclusion of harvested wood products would necessitate an estimation methodology that separates wood products originating from Article 3.3 and 3.4 activities from wood due to harvesting in other parts of the forest system. The Parties should also decide which of the three different IPCC accounting approaches should be used to verify the carbon stock changes in wood products.[NOR]

Proposal 5: Additional expert work needed on methodologies related to Article 3.3 and 3.4

387. Article 3.3 and 3.4 need further comprehensive work at expert level, including scientific work regarding methodologies for proper estimation of carbon removal and storage by different ecosystems in different geographical regions, with the aim to elaborate the relevant rules, guidelines and modalities necessary for proper implementation of these articles. Thus, it seems to be quite difficult to apply the provisions contained in Article 3.3 and 3.4 of the Kyoto Protocol during the first commitment period (2008-2012).[POL]

I. Other

Proposal 1: Supplementary information required consistent with Articles 7 and 8

388. *Supplementary information on the accounting by a Party under Article 3.3 and Article 3.4 shall be submitted in accordance with Article 7 of the Protocol and shall be sufficient to ensure transparency and verifiability during the expert review process established by Article 8. It shall also be sufficient to demonstrate consistent application of definitions and land areas subject to accounting within and between commitment periods, and to demonstrate compliance with the accounting rules agreed by Parties.*[CAN]

VI. OTHER

A. Clean development mechanism

1. LUCF activities for inclusion under Articles 6 and 12 of the Kyoto Protocol

Proposal 1: ARD plus other limited activities consistent with multilateral environmental agreements

389. For the early commencement of the clean development mechanism (CDM), the following activities are proposed for initial qualification in the CDM:

(a) Afforestation;

(b) Reforestation;

(c) Reduction of emissions by prevention (avoidance) of deforestation;

(d) Improvement of management of forest and agricultural soils;[42]

(e) Rehabilitation and restoration of severely degraded lands.(BOL)

390. Projects to utilize biomass as an energy source should be considered as combined energy/LULUCF projects, with methodologies applicable on a case-by-case basis, according to the relative importance of each of the components of the project.(BOL)

391. CDM and joint implementation (JI) projects shall have very specific definitions of activities and a carbon credit accounting system. ARD activities, as well as Article 3.4 activities, should be included in the CDM projects, from the commencement of operation onwards.(BOL)

392. The scope of projects eligible under Article 12 should correspond to the activities eligible under Articles 3.3 and 3.4.(BOL)

Proposal 2: Reforestation after human-induced deforestation or fire excluded; afforestation and reforestation on lands without forest in 1990 included; reforestation of lands naturally deforested included

393. Reforestation of lands deforested by direct human-induced causes should not be eligible for project activities under Articles 6 and 12. On the other hand, reforestation of lands deforested by natural causes should be eligible under those articles. Recognizing that forest fires can be caused by natural forces, but given the facts that slash-and-burn practices are the main causes of land-use change worldwide, and the difficulties involved in determining a fire origin, it is proposed that reforestation of land that has been cleared by a previous fire, should not be eligible for project activities under Articles 6 and 12 of the Kyoto Protocol.(CHL)

394. A patch of land without forest existing in 1990 that is converted into forest after that year and remains in that condition, turns into a new carbon stock as the forest grows. This situation should be considered as "afforestation" for Kyoto Protocol purposes.(CHL)

395. In general, almost all afforestation is a direct human-induced activity, because any land patch without forest cover before 1990 has little chance of obtaining a forest cover without human-induced intervention, such as site preparation, direct sowing or planting with seedlings and protection against both domestic and wild animals. On the other hand, natural regeneration generally requires the tree felling of a pre-established natural or planted forest in the same patch of land to prosper, and should be defined as reforestation if it occurs from 1990 onwards.(CHL)

396. Since Article 3.3 establishes that only direct human-induced activities shall be used to meet the commitments of each Annex I Party, verified afforestation activities should apply to carbon credits under the Kyoto Protocol mechanisms.(CHL)

397. Regarding the afforestation, harvest and reforestation cycle, only afforestation of lands without forest since 1990 should be considered as carbon sequestration under Articles 6 and 12,

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[42] These activities include, but are not limited to, the following:

- Improvement in sustainable forest management to a point below certain agreed standards;
- Enhancement of natural regeneration of forests;
- Agroforestry, including windbreaks and yield of trees in combination with cattle management;
- Sustainable soil management, in accordance with its use capacity.(BOL)

since reforestation after successive harvesting in the same patch of land does not constitute a new carbon sequestration. Only the recovery of the capture made during the first stage of afforestation should be considered as real carbon sequestration.(CHL)

Proposal 3: Article 3.3 and 3.4 activities including avoidance of deforestation to be included

398. Direct human-induced LULUCF activities, limited to afforestation, reforestation and deforestation as indicated in Article 3.3, and those of common application to all Parties included in Annex I, to be defined for Article 3.4, shall be eligible for the clean development mechanism, according to the terms and principles of document FCCC/SB/2000/MISC.1/Add.2.(CRI)

399. By virtue of the above, the eligibility of land-use change and forestry activities for the CDM shall be circumscribed to afforestation, reforestation and deforestation, according to the following definitions:(CRI)

(a) **Afforestation:** Establishment of forest condition[43] in lands where there were no forests during the last 20 years prior to the beginning of the CDM projects;(CRI)

(b) **Reforestation:** Re-establishment of forest condition[43] in lands that had been deforested prior to the beginning of the CDM projects;(CRI)

(c) **Deforestation:** Conversion of forest to non-forest condition[43] for economic purposes, by human activity.(CRI)

400. Project activities that effectively reduce emissions caused by deforestation through the protection of carbon deposits under the threat of deforestation shall be included, as well as activities that increase carbon deposits through afforestation and reforestation.(CRI)

Proposal 4: Inclusion of LULUCF projects in the clean development mechanism

401. The inclusion of LULUCF projects in the clean development mechanism under Article 12 is strongly supported.(USA)

2. Criteria for eligibility of activities

Proposal 1a: LULUCF activities, forest conservation and regeneration to be included, general framework for sustainable development to be established

402. Consistency between United Nations agreements and conventions calls for the inclusion of forest conservation and regeneration activities, as well as other LULUCF activities, within the CDM, taking into account the necessary compatibility of objectives between Agenda 21, the UNFCCC, and the conventions on biodiversity, desertification, and wetlands (the Ramsar Convention).(BOL)

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[43] Forest and non-forest condition are respectively defined as all natural land ecosystem or forest plantation, whose live vegetal above-ground biomass is superior or inferior to the threshold pre-established at 10 per cent of its potential biomass, which varies according to the biome.

403. Minimum criteria for defining baselines, in accordance with the principles and guidelines already negotiated in Agenda 21 and the multilateral environmental agreements, should be applied for the certification of CDM projects.[BOL]

404. With respect to the issue of how to define sustainable development criteria for CDM projects, although this is to remain a subject of sovereign definition of the Parties involved, a general framework must be established, thus avoiding perverse incentives to undertake activities aimed, for example, solely at carbon sequestration, without taking into account the additional socioeconomic, cultural and environmental effects of the projects itself.[BOL]

Proposal 1b: Projects must encourage people's participation and not cause adverse environmental impacts

405. Projects should enhance poverty alleviation and job creation. CDM projects in LULUCF are not acceptable if they do not encourage people to participate, if they causes adverse impacts on the local environment or if they are too costly.[IDN]

Proposal 2: LULUCF must demonstrate its anthropogenic nature

406. One of the indispensable requirements for the eligibility of activities as LULUCF is to demonstrate their anthropogenic nature.[CRI]

3. Accounting framework and rules

Proposal 1: Very specific definitions of activities and a carbon credit accounting system

407. CDM and JI projects shall have very specific definitions of activities and a carbon credit accounting system. ARD activities, as well as Article 3.4 activities, should be included in the CDM projects, from the commencement of operation onwards.[BOL]

Proposal 2: Parallelism of accounting systems for Articles 3, 6 and 12

408. Article 3.1, 3.3 and 3.4 constitute the accounting base for Parties included in Annex I, while Article 3.10, 3.11 and 3.12 define the accounting adjustments through the Kyoto Protocol mechanisms; the relationships derived from Article 12 must also be remembered. In order to ensure the consistency of the overall accounting framework of the Protocol, a parallelism shall be established between the accounting base defined in Article 3.1, 3.3, 3.4, 3.10, 3.11 and 3.12 and those defined in Articles 6 and Article 12.[CRI]

4. Methodological issues

Proposal 1: Treat LULUCF projects like energy projects, except for reversibility which should be avoided

409. LULUCF projects in the CDM must receive a similar treatment to energy projects, with respect to additionality, verifiability, transparence, and leakage control. The only distinctive issue for LULUCF projects is that of avoiding the reversibility of the carbon benefits of each project which should be taken care of through proper involvement of all stakeholders in the

projects, creating socio-economic alternatives to the carbon release and the appropriate accounting methods.(BOL)

Proposal 2a: Monitoring essential, risk and uncertainty analysis required as well as an external audit

410. A monitoring system at project level is essential to quantify and control the net carbon benefits during the project's lifetime. The monitoring shall be complemented with an external audit to validate its results and to verify the project performance in terms of its net carbon benefits.(CRI)

411. Diverse measures may be taken to reduce the risk of leakage. However, the most effective measures are adequate project design and system boundary definitions.(CRI)

412. A CDM project shall include, as an integral part of its design, a risk and uncertainty analysis and shall establish at the project level, a temporary or permanent buffer of certified emission reductions to compensate for potential risks related to natural, anthropogenic, political, economical and financial factors.(CRI)

413. The permanence issue of CDM LUCF projects can be accounted for within all subsequent projects by demanding that the subsequent projects adopt, within their systems boundaries, any former CDM project of the same sector.(CRI)

Proposal 2b: Treatment of methodological issues including leakage, baselines and additionality essential

414. LULUCF in CDM will only be applicable if various issues such as uncertainties regarding definitions, methodologies and other technical problems such as baselines and additionality, project boundary and leakage, and risks management are resolved.(IDN)

Proposal 3: No credit when leakage and/or duration are not addressed

415. Where leakage and/or the duration of climate benefits cannot be addressed, credit should not be issued.(USA)

Annex I

LIST OF PARTIES AND CORRESPONDING COUNTRY CODES

Australia	AUS
Bolivia	BOL
Canada	CAN
Chile	CHL
Costa Rica	CRI
France (on behalf of the European Community and its member States)	FRA
Iceland	ISL
Indonesia	IDN
Japan	JPN
New Zealand	NZL
Norway	NOR
Poland	POL
Russian Federation	RUS
Switzerland	CHE
United States of America	USA

Annex II

COSTA RICA, ON BEHALF ALSO OF ARGENTINA, BOLIVIA, CHILE, COLOMBIA, THE DOMINICAN REPUBLIC, ECUADOR, GUATEMALA, HONDURAS, MEXICO, NICARAGUA, PANAMA, PARAGUAY AND URUGUAY

LAND-USE, LAND-USE CHANGE AND FORESTRY PROJECTS UNDER THE CLEAN DEVELOPMENT MECHANISM

The countries listed above submit to the UNFCCC Secretariat the following document and request its publication as a miscellaneous non-paper during the XII Sessions of the Subsidiary Bodies to the UNFCCC (12-16 June 2000). The aim of this non-paper is to address comments made by some observers suggesting that Land-Use, Land-Use Change and Forestry (LULUCF) projects are ineligible under Article 12 of the Protocol, which defines the Clean Development Mechanism (CDM of the Kyoto Protocol). In our view, these comments do not have any valid legal or scientific basis, and have become an unwelcome distraction from efforts to develop the rules necessary to ensure that the CDM fulfills its purposes of assisting non-Annex I Parties in achieving sustainable development, and assisting Annex I Parties in achieving compliance with their quantified emission limitation and reduction commitments, with a contribution to the ultimate objective of the Convention.

The above-listed countries emphasize that questions of interpretation of the Kyoto Protocol must be resolved in accordance with Article 2 of the Convention which states: "The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system." Consistent with this objective, the above-listed countries state the following:

I. LULUCF projects are eligible under the Article 12 CDM. Article 12 does not explicitly or implicitly exclude LULUCF projects from eligibility.

A number of observers have interpreted Article 12 as excluding from eligibility under the CDM projects from the LULUCF sector. The plain language of Article 12 does not contain *any* explicit exclusion of *any* category of projects. Nevertheless, these observers argue that an implicit exclusion must be read into Article 12. This exclusionary interpretation of Article 12 is invalid for the following reasons:

A) The exclusionary interpretation is inconsistent with the guiding principles of the Protocol. The Preamble to the Protocol states that the Parties to the Protocol will be "guided by Article 3 of the Convention," which sets forth the Convention's principles. One of the Article 3 principles is that the policies and measures undertaken by the Parties "should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors." Reading into Article 12 an implicit exclusion of LULUCF projects is inconsistent with this guiding principle of the Protocol. Obviously, the drafters intended to preserve this principle of comprehensiveness established in the text of the Convention.

B) The exclusionary interpretation is inconsistent with Article 2 of the Protocol. Article 2 of the Kyoto Protocol sets forth how each Annex I Party is to achieve its quantified emission limitation and reduction commitments (QELRCs) under Article 3 while promoting sustainable development. Article 2 states that each Annex I Party "shall [i]mplement and/or further elaborate policies and measures in accordance with its national circumstances, such as: ...(ii) [p]rotection and enhancement of sinks and reservoirs of greenhouse gases; ...and (iii) promotion of sustainable forms of agriculture in light of climate change considerations." Given that Article 12's stated purposes are to provide a means for Annex I Parties to achieve their QELRC's and to contribute to sustainable development, Article 2 dictates the scope of activities eligible under Article 12.

C) The term "emission reductions" as it is used in Article 12 does not imply that only projects that reduce emissions, and not projects that remove emissions, may be considered under Article 12 of the CDM. The term "emission reductions" is not explicitly defined in either the Convention or the Protocol. Throughout the Protocol, it is used as a term of art to refer to particular kinds of units of account rather than particular types of activities.

The term "emission reductions" appears for the first time in Articles 3.10, 3.11 and 3.12. Articles 3.10 and 3.11 use the term "emission reductions units" as the Article 6 unit of account to adjust the assigned amounts of the Parties involved. Similarly, Article 3.12 uses the term "certified emission reductions" as the unit of account to adjust the assigned amount of the acquiring Party in a CDM transaction. The text uses the word "certified" to distinguish the emissions reduction units of account obtained under Article 12 from those obtained under Article 6.

The next appearance of the term "emission reductions" is in Article 6. The plain language of Article 6 states that "emission reduction units" may "result[] from projects aimed at *reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks in any sector of the economy*" (emphasis added).

Accordingly, the Protocol uses the term "emission reductions" in connection with the project-based mechanisms to describe the impact of projects on Parties' accounts, not the type or category of project. Moreover, Article 6 makes clear that the drafters contemplated that "emission reduction units" could result from projects that enhance removals by sinks. Where the drafters intended to distinguish among categories of eligible activities and projects, they did so explicitly, e.g., Article 6's reference to "projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks"; and Article 3.3's reference to "afforestation, reforestation, and deforestation."

However, even if one infers from the use of term "emission reduction" in Article 12 an implicit exclusion of projects that enhance removals by sinks, it is important to note that not all LULUCF projects are sinks projects. As the IPCC has recognized, forests can be sources, sinks, or reservoirs. Many LULUCF projects slow, reduce, or avoid deforestation. Such projects reduce anthropogenic emissions by sources.

D) The exclusionary interpretation is inconsistent with the mandatory accounting framework for Annex I Parties established under Article 3.3. Article 3.3 states that "net changes in greenhouse gas emissions by sources and removals by sinks, resulting from direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in carbon stocks in each commitment period, *shall* be used to meet the commitments under this Article of each Party included in Annex I" (emphasis added). Accordingly, Article 3.3 establishes explicitly that Annex I Parties must take into account certain LULUCF activities in meeting their commitments under Article 3. Since Article 3.3 refers explicitly to "net changes" –a phrase which automatically includes emissions by sources and removals by sinks– and since one of the purposes of Article 12 is to assist those Parties in meeting their commitments under Article 3, it would be inconsistent with the mandatory Article 3.3 accounting framework to exclude LULUCF projects from Article 12. Accordingly, the scope of projects eligible under Article 12 should correspond to the activities eligible under Articles 3.3 and 3.4.

To the extent that arguments against the eligibility of LULUCF projects under Article 12 represent a "back-door" effort to renegotiate Article 3 or any other provisions of the Protocol, the above-listed countries condemn such an effort. As Article 26 of the Protocol makes clear, the text of the Protocol is final and whole. It is not subject to renegotiation.

E) The exclusionary interpretation is inconsistent with the CDM's purpose of assisting Non-Annex I countries in achieving sustainable development and meeting the costs of adaptation measures. The sustainable management of natural resources, including land-use, land-use change and forestry activities, is deemed critical for the achievement of sustainable development as well as for addressing vulnerability to climate change. The exclusionary interpretation fundamentally conflicts with the ultimate objective of the Convention expressed in Article 2 and conflicts with the principles expressed in Article 3.1 ("The Parties should protect the climate system for the benefit of present and future generations of humankind, on the basis of equity and in accordance with their common but differentiated responsibilities and respective capabilities.")

F) In the past, proponents of the exclusionary interpretation of Article 12 have asserted that a lack of full scientific certainty about the validity of LULUCF projects justifies making such projects ineligible under Article 12. This argument is inconsistent with the guiding principles of the Protocol as expressed in Article 3 of the Convention. Article 3.3 of the Convention states that: "The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, *lack of full scientific certainty should not be used as a reason for postponing such measures*, taking into account the policies and measures to deal with climate change should be cost-effective so as to ensure global benefits at the lowest possible cost" (emphasis added).

Moreover, even if there was at one time a lack of full scientific certainty about the merits of projects from the LULUCF sector, particularly compared to projects from the energy sector, this uncertainty has been resolved by the authoritative IPCC Special Report on Land-Use, Land-Use Change, and Forestry. This report cites with approval a review and comparison of projects from both sectors. The IPCC states:

"This assessment found that LULUCF and energy projects face parallel, comparable issues in measurement and in ensuring social and environmental benefits. *In general, it is not possible to assert that energy projects are superior as a class to LULUCF projects on these grounds.*" (Emphasis added).

The IPCC report identified only one significant difference between projects in the two sectors. This issue, duration, is associated with only certain types of LULUCF projects and can be addressed through project design. All in all, the IPCC Special Report does not provide any scientific basis for excluding the entire category of LULUCF projects from eligibility under the CDM.

II. Conclusions

According to the letter of the Protocol, the spirit of the negotiations, and the purpose of the Clean Development Mechanism, LULUCF projects are eligible to receive certified emissions reductions. The scope of eligible LULUCF projects should correspond to the activities established under the Article 3.3 and those to be established under Article 3.4. Projects that effectively and credibly avoid, slow, or reduce deforestation are covered under Article 3.3, whether the project includes total protection or forest management.

Excluding LULUCF projects and other related activities from the CDM will go against the spirit, objectives and principles of the Convention and the Kyoto Protocol.

The time has ended for spurious legal interpretations and invalid scientific claims regarding LULUCF projects. These arguments have distracted from the real task at hand, which is developing the rules that will ensure that all CDM projects have real, measurable, and long-term benefits related to the mitigation of climate change and that those benefits are additional to those that would occur in the absence of those projects. The above-listed countries offer this paper in the hope that we all can move forward in designing a CDM that is characterized by environmental integrity and assists in our achievement of sustainable development.

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